

حمل الآن

مجانا وحصريا

امتحانات رقم (1)

الترم الثاني



Model (1)

20
Marks

1 A) Complete the following sentences:

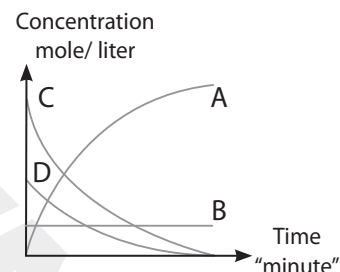
- 1 The reaction of an acid with a base to form salt and water is known as reaction.
- 2 The two factors of a genetic trait are identical in a individual.
- 3 is used to measure electrical potential difference.

B) Give a reason for:

- 1 The pituitary gland is called the master gland.
.....
- 2 Reactions between ionic compounds are fast, while reactions between covalent compounds are slow.
.....
.....
.....

C) The opposite figure represents the relation between concentration and time for a certain reaction. Determine the following:

- 1 The reactants, products and catalyst.
.....
- 2 Write the balanced equation that represents this reaction using the given symbols.
.....



2 A) Cross out the odd word, then mention the relationship between the rest words:

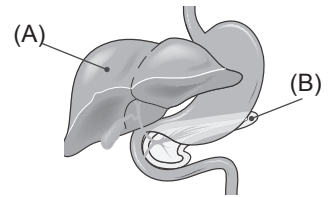
- 1 Uranium – Cesium – Barium – Radium
.....
- 2 Chromosome - DNA – Protein – Enzymes
.....
- 3 Nature of reactants – Temperature of reactants – Concentration of products – Catalysts.
.....

B) Write the balanced chemical equation for each of the following:

- 1 Sodium chloride solution reacts with silver nitrate solution.
.....
- 2 Magnesium reacts with copper sulfate solution.
.....

C) Look at the opposite diagram, then answer:

Name the hormones secreted by organ (B) which ... :



- 1 lowers the blood glucose level. (.....)
- 2 stimulates organ (A) to convert stored glycogen into glucose. (.....)

3 A) Choose the correct answer:

- 1 An electric circuit consists of a battery with an electromotive force of 3 volts connected in series with a resistance of 6 ohms. The current intensity flowing through the circuit is
a) 2 ampere b) 1 ampere c) 1.5 ampere d) 0.5 ampere
- 2 The percentage of the recessive trait in the first generation resulting from the cross of two parents, one carrying a pure dominant trait and the other carrying a recessive trait, is
a) 0% b) 25% c) 50% d) 75%
- 3 $\text{Fe}^{+2} \longrightarrow \text{Fe}^{+3}$. This process is called
a) reduction b) decomposition
c) oxidation d) oxidation and reduction together

B) Define:

- 1 Electric current intensity.

.....
.....

- 2 Radioactive pollution.

.....

C) An electrical conductor has a voltage difference of 18 volts across its terminals, with a current of 2 amperes flowing through it. When connected to another power source, the current increased by 3 amperes. Calculate the potential difference across the conductor.

.....
.....

4 A) Correct the underlined words:

- 1 Most metals sulfates decompose by heating into metal oxide and carbon dioxide gas. (.....)
- 2 The thyroid gland secretes growth hormone, which regulates calcium levels in the blood. (.....)

B) What happens if?

- 1 The mating of two pure individuals with one pair of contrasting traits.

(in terms to the first and second generations)

.....

.....

- 2 Reactant concentration reaches zero in a chemical reaction.

.....

C) When two tomato plants are crossed—one has red fruits and the other has yellow fruits (a trait that is always recessive). Explain, based on genetics, the genetic structure of the parents and their gametes, and illustrate the offspring resulting from their cross.

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Model (2)

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Marks

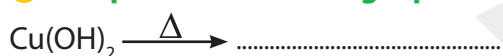
1 A) Choose the correct answer:

- 1 gland secretes hormone regulating general body growth.
a) Pituitary b) Thyroid c) Adrenal d) Reproductive
- 2 is the physical quantity whose measuring unit is volt/ampere.
a) Electric current b) Potential difference
c) Electric charge d) Electrical resistance
- 3 Sodium metal replaces all the following metals in their salt solutions except
a) copper b) potassium c) magnesium d) zinc

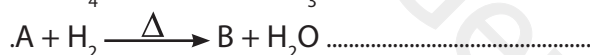
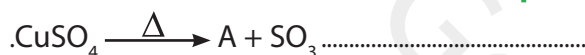
B) 1 Calculate the electric current intensity of charges of 5400coulomb flow through a conductor in 30 seconds.

.....

2 Complete the following equation:



C) What is the chemical formula of compound A and element B in the following reactions?



.....

2 A) Write the scientific term:

- 1 An inflatable bag folded inside the steering wheel of modern cars as a safety tool during accidents. (.....)
- 2 The potential difference between the terminals of a battery in an open electrical circuit. (.....)
- 3 The increase in the amount and intensity of nuclear radiation in the surrounding environment. (.....)

B) What is the importance or use of?

- 1 Catalytic converters in modern cars.
.....
- 2 Variable resistor (sliding rheostat).
.....

C) Compare between each of the following:

- 1 Positive catalyst and negative catalyst (in terms of the speed of chemical reaction)

Positive catalyst	Negative catalyst
.....	

- 2 Skin color in humans and the skill of playing football (in terms of trait type)

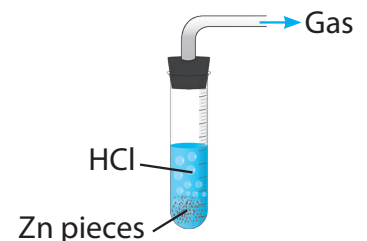
Skin color in humans	Skill of playing football
.....	

3 A) Put (✓) or (X):

- 1 Mendel allowed pea plants to self-pollinate for several generations to ensure trait purity. ()
- 2 The resistance of a conductor through which an electric current intensity of 12 ampere flows when the potential difference across its terminals is 2 volts is 6 ohms. ()
- 3 When silver is added to hydrochloric acid, silver chloride is formed and hydrogen gas is evolved. ()

B) Look at the opposite figure, then answer:

- 1 What is the name of the released gas?
- 2 What is the name of the formed salt?



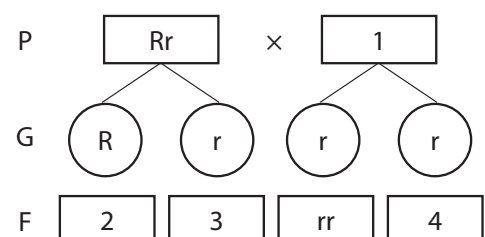
C) The opposite diagram shows cross-pollination between a pea plant with red flowers and another with white flowers. Answer the following:

- 1 Replace the numbers with the appropriate genetic symbols.

.....

- 2 State the percentage of recessive traits.

.....



4 A) Complete the following sentences:

- 1 During emergencies the secretion of hormone increases.
- 2 Electric cells produce a current.
- 3 The enzyme is found in sweet potatoes increases the rate of chemical reactions.

B) What happens when ...?

- 1 A lit matchstick is brought near the mouth of a test tube containing heated copper carbonate.

.....

- 2 Increasing the length of the wire in a sliding rheostat in an electric circuit.
(in terms to the current intensity)

.....

C) Give a reason for:

- 1 It is necessary for humans to include iodine in their food.

.....

.....

- 2 Food is stored in the refrigerator.

.....

.....

Model (3)

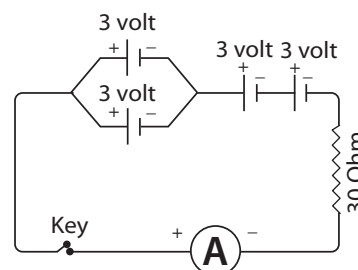
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Marks

1 A) Write the scientific term:

- 1 Traits that cannot be transferred from one generation to another. (.....)
- 2 The change in the concentration of reactants and products per unit of time. (.....)
- 3 The potential difference between the two poles of the dry cell in an open electrical circuit. (.....)

B) From the opposite electric circuit, write the number indicating each of the following:

- 1 The current intensity passing through the circuit.
.....
- 2 The current intensity passing through the circuit if all the dry cells are connected in parallel.
.....



C) Mention the use or importance for each of the following:

- 1 Dynamo
.....
- 2 Adrenaline hormone
.....

2 A) Complete the following sentences:

- 1 One of the effects of human exposure to high doses of radiation for short periods is the
.....
- 2 When sodium hydroxide solution is added to copper sulfate solution, a colorless
..... solution is formed.
- 3 If the work done to transfer an electric charge of 200 coulomb between two points is 2200 joule, the potential difference between the two points is equal

B) Study the following equations, then answer:

-
.....
- 1 The name of compound A and its formula:
 - 2 The color of the precipitate B and its formula.

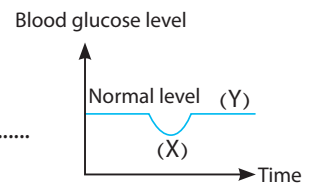
C) Look at the opposite graph, then answer:

1 What is the hormone that causes the change in blood sugar concentration from (X) to (Y)?

.....

2 The gland that secretes this hormone.

.....



3 A) Cross out the odd word, then mention the relation between the other words:

1 Calcium / Silver / Aluminum / Magnesium

.....

2 Ampere / Volt / Ohmmeter / Ohm

.....

3 Exophthalmoses / Weight loss / Tension / Continuous growth of limb bones

.....

B) The opposite diagram shows the rate of decomposition of hydrogen peroxide.



1 Write the name of the compound or element indicated by each number:

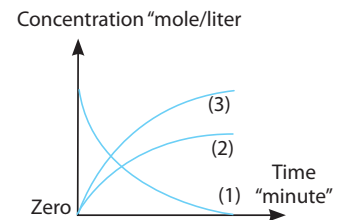
.....

.....

.....

2 The catalyst used in this reaction:

.....



C) Explain, based on genetics, the genetic structure of the individuals in the first

generation resulting from the cross between a man with hybrid brown eyes (Bb) and a woman with pure colored eyes (bb). Also indicate the percentage of the offspring who will have the colored eyes trait among the resulting generation.

.....

.....

.....

.....

.....

.....

4 A) Put (✓) or (X):

- 1 The genetic structure of a tall pea plant with pure red flowers is (TTRR). ()
- 2 The maximum safe radiation dose for workers in the field of radiation is 1 millisievert per year. ()
- 3 The reaction time of iron rusting is shorter than that of soap production. ()

B) Write the number that indicates to each of the following:

- 1 The number of electric cells that make up a battery with an electromotive force (e.m.f.) of 9 volt, knowing that all the cells are connected in series and the e.m.f. of each cell is 1.5 volt.

.....

- 2 The hereditary traits that Mendel selected for his experiments.

.....

C) You have three electric cells, each with an e.m.f. of 3 volt, a fixed resistance of 10 ohms, and an ammeter. How can you connect them to make the ammeter read ...?

- 1 0.6 ampere 2 0.9 ampere

1

2

.....
.....
.....
.....
.....
.....

Model (4)

20
Marks

1 A) Correct the underlined words:

- 1 The airbag contains, which decomposes when there is a sudden change in speed.
- 2 A copper wire with a length of 2 meters carries a current of 10 ampere. If the length of the wire becomes 4 meter while the cross-sectional area remains constant, the current intensity passing through it becomes
- 3 A deficiency of in food leads to a deficiency of the thyroxine hormone.

B) What is meant by?

- 1 Endocrine Glands.

.....

- 2 Neutralization Reaction.

.....

C) Explain with balanced symbolic equations:

- 1 The effect of heat on copper carbonate (green).

.....

- 2 The reaction of dilute hydrochloric acid with sodium carbonate.

.....

2 A) Cross out the odd word:

- 1 Skin color – Blood type – Number of fingers – Swimming

.....

- 2 Destruction of bone marrow – Changes in the structure of sex chromosomes – Destruction of the nervous system – Destruction of the digestive system

.....

B) Mention the roles of the following scientists:

- 1 Badel and Tatum

.....
.....

- 2 Watson and Crick

.....
.....

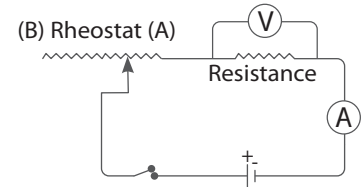
C) In the opposite electric circuit , what happens to each of the following when the rheostat slider is moved from (A) to (B).

1 Ammeter reading and voltmeter reading

.....

2 Resistance value

.....



3 A) Mention one example for each of the following:

1 A gas that causes a glowing matchstick.

.....

2 A type of radiation activity released during nuclear reactions that can be controlled.

.....

3 A hormone responsible for regulating calcium levels in the blood.

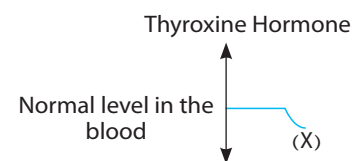
.....

B) A conductor with a resistance of 1000 ohm is connected to a power source with a potential difference of 100 volts. Calculate the amount of charge passing through the conductor during a time of 100 seconds.

.....

.....

C) The diagram shows a hormone secreted by the thyroid gland into the blood. What disease results from the hormone reaching point (X)



.....

4 A) Correct the underlined words:

1 Sodium nitrate decomposes with heat, and nitrogen gas is released. (.....)

2 The first part to be affected when a person is exposed to a large dose of radiation over a short period of time is the stomach. (.....)

3 An ohmmeter is used to control the potential difference between the two ends of a conductor in an electrical circuit. (.....)

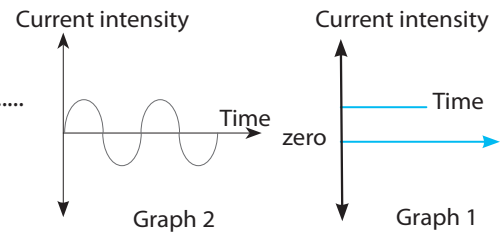
(B) Study the two graphs shown and determine which graph represents:

- ① A current that is not used in the electroplating process.

.....

- ② A current produced from the conversion of chemical energy into electrical energy.

.....



(C) Explain, based on genetic principles, the result of mating a male and a female fruit fly, both with long wings. The result was 45 long-winged individuals and 15 short-winged individuals, known that the gene for long wings is represented by the symbol (T) and the gene for short wings is represented by the symbol (t):

.....
.....
.....
.....
.....
.....

Model (5)

20
Marks

1 A) Complete the following sentences:

- 1 The simple goitre disease is caused by a deficiency in the secretion of **growth** hormone.
(.....)
- 2 The unit volt.ampere.second is a unit for **measuring electric potential difference**.
(.....)
- 3 Aluminium reacts with dilute hydrochloric acid after a period of time due to the presence of a layer of **aluminium chloride**.
(.....)

B) Give a reason for:

- 1 The ability to roll the tongue is a dominant trait in humans.
.....
.....
- 2 Radioactive wastes are buried far away from groundwater sources.
.....

C) Write the balanced symbolic equation for each of the following:

- 1 Thermal decomposition of sodium nitrate:
.....
- 2 The reaction between sodium and water:
.....

2 A) Write the scientific term:

- 1 The state of an electric conductor that shows the transfer of electricity from or to it when it is connected to another conductor
(.....)
- 2 A substance that changes the rate of a chemical reaction without being changed itself.
(.....)
- 3 Substances or chemical messengers that regulate and organize biological activities in a living organism.
(.....)

B) What happens when?

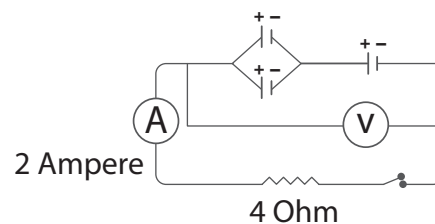
- 1 Mendel left the stigmas of pea plant flowers uncovered during his study of genetic traits.
.....
- 2 The flow of electrons in opposite directions in an electric circuit.
.....

C) In the given diagram, if the cells are identical, calculate:

- 1 Voltmeter reading

.....

- 2 The electromotive force (e.m.f) of each cell =



3 A) Complete the following sentences:

- 1 The phenomenon of radioactivity was discovered by the scientist
- 2 The reaction $O^{-2} \longrightarrow O^{-} + e^{-}$ represents a process of
- 3 The trait of attached earlobes is a trait in humans.

B) Compare between each of the following:

- 1 The oxidizing agent and the reducing agent (in terms of loss or gain of electrons).

Oxidizing agent	Reducing agent
.....	

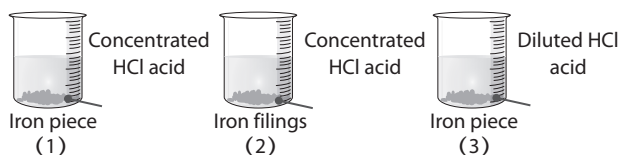
- 2 The pure individual and the hybrid individual (in terms of definition).

Pure individual	Hybrid individual
.....	

C) Look at the following reactions, then answer:

- 1 Which of these reactions is the fastest (1, 2, or 3)?

.....



- 2 The two factors affecting the speed of this reaction:

.....

4 A) Choose the correct answer:

1 hormone responsible for the appearance of secondary sexual characteristics in females.

- a- Estrogen b- Testosterone c- Insulin d- Progesterone

2 is the international unit that measures the radiation absorbed by the human body.

- a- Joule b- Meter c- Sievert d- Coulomb

3 If the genetic structure of a child is (bb), the possible genetic structure of the parents is

- a- Bb × BB b- bb × BB c- Bb × bb d- BB × BB

B) A conductor carries a current of 0.2 ampere and the potential difference across it is 10 volt. Calculate:

1 The amount of charge passing through it in 5 minutes:

.....

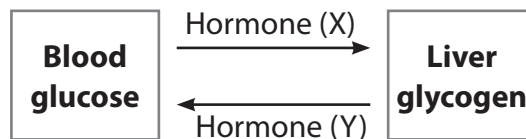
2 The work done in transferring 100 coulomb of charge:

.....

C) Look at the opposite diagram, then answer:

1 What are the names of hormone (X) and hormone (Y)?

.....
.....



2 What disease results from a deficiency of hormone (Y)?

.....

Model (1)

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Marks

1 A) Complete the following sentences:

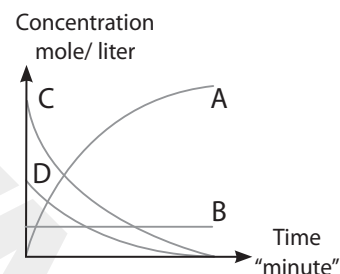
- 1 The reaction of an acid with a base to form salt and water is known as **neutralization** reaction.
- 2 The two factors of a genetic trait are identical in a **pure** individual.
- 3 **Voltmeter** is used to measure electrical potential difference.

B) Give a reason for:

- 1 The pituitary gland is called the master gland.
- **Because it secretes hormones that regulate the activities of most other endocrine glands.**
- 2 Reactions between ionic compounds are fast, while reactions between covalent compounds are slow.
- **Because ionic compounds dissociate into ions in water, allowing reactions to occur between the ions directly, while covalent compounds do not dissociate into ions, and reactions occur between molecules.**

C) The opposite figure represents the relation between concentration and time for a certain reaction. Determine the following:

- 1 The reactants, products and catalyst.
Reactants (C,D) - Products (A) - Catalyst (B)
- 2 Write the balanced equation that represents this reaction using the given symbols.



2 A) Cross out the odd word, then mention the relationship between the rest words:

- 1 Uranium – Cesium – Barium – Radium
- **(Barium) (Radioactive elements)**
- 2 Chromosome - DNA – Protein – Enzymes
- **(Enzymes) (Structure of chromosome)**
- 3 Nature of reactants – Temperature of reactants – Concentration of products – Catalysts.
- **Concentration of products) (Factors affecting the speed of reaction)**

B) Write the balanced chemical equation for each of the following:

- 1 Sodium chloride solution reacts with silver nitrate solution.



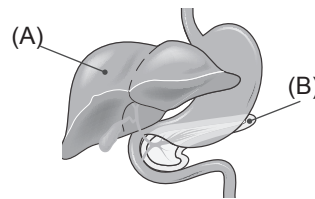
- 2 Magnesium reacts with copper sulfate solution.



C) Look at the opposite diagram, then answer:

Name the hormones secreted by organ (B) which ... :

- 1 lowers the blood glucose level. (**Insulin hormone**)
- 2 stimulates organ (A) to convert stored glycogen into glucose. (**Glucagon hormone**)



3 A) Choose the correct answer:

- 1 An electric circuit consists of a battery with an electromotive force of 3 volts connected in series with a resistance of 6 ohms. The current intensity flowing through the circuit is
a) 2 ampere b) 1 ampere c) 1.5 ampere **d) 0.5 ampere**
- 2 The percentage of the recessive trait in the first generation resulting from the cross of two parents, one carrying a pure dominant trait and the other carrying a recessive trait, is
a) 0% b) 25% c) 50% d) 75%
- 3 $\text{Fe}^{+2} \longrightarrow \text{Fe}^{+3}$. This process is called
a) reduction b) decomposition
c) oxidation d) oxidation and reduction together

B) Define:

- 1 Electric current intensity.

It is the quantity of electricity in coulomb or the electric charges flowing through a cross-section of the conductor in one second

- 2 Radioactive pollution.

- It is the increase in nuclear radiation levels in the surrounding environment.

- C) An electrical conductor has a voltage difference of 18 volts across its terminals, with a current of 2 amperes flowing through it. When connected to another power source, the current increased by 3 amperes. Calculate the potential difference across the conductor.**

$$\text{Resistance (R)} = \frac{V}{I} = \frac{18}{2} = 9 \text{ ohms}$$

$$(V) = R \times I = 9 \times 5 = 45 \text{ volts}$$

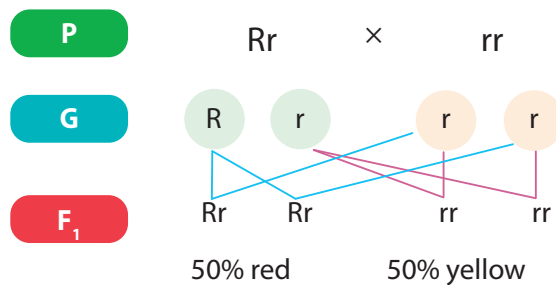
4 A) Correct the underlined words:

- 1 Most metals sulfates decompose by heating into metal oxide and carbon dioxide gas. (**Sulphur trioxide**)
- 2 The thyroid gland secretes growth hormone, which regulates calcium levels in the blood. (**Calcitonin**)

B) What happens if

- 1 The mating of two pure individuals with one pair of contrasting traits.
(in terms to the first and second generations)
 - The dominant trait appears in the first generation at a rate of 100%, then both traits are inherited together in the second generation at a ratio of 3 (dominant trait) : 1 (recessive trait)
- 2 Reactant concentration reaches zero in a chemical reaction.
 - The reaction stops, and the product concentration reaches 100%.

C) When two tomato plants are crossed—one has red fruits and the other has yellow fruits (a trait that is always recessive). Explain, based on genetics, the genetic structure of the parents and their gametes, and illustrate the offspring resulting from their cross.



Model (2)

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Marks

1 A) Choose the correct answer:

- 1 gland secretes hormone regulating general body growth.
a) **Pituitary** b) Thyroid c) Adrenal d) Reproductive
- 2 is the physical quantity whose measuring unit is volt/ampere.
a) Electric current b) Potential difference
c) Electric charge **d) Electrical resistance**
- 3 Sodium metal replaces all the following metals in their salt solutions except
a) copper **b) potassium** c) magnesium d) zinc

B) 1 Calculate the electric current intensity of charges of 5400coulomb flow through a conductor in 30 seconds.

$$I = \frac{q}{t} = \frac{5400}{30} = 180 \text{ amp.}$$

2 Complete the following equation:



C) What is the chemical formula of compound A and element B in the following reactions?



A: (CuO)

B: (Cu)

2 A) Write the scientific term:

- 1 An inflatable bag folded inside the steering wheel of modern cars as a safety tool during accidents. **(Airbag)**
- 2 The potential difference between the terminals of a battery in an open electrical circuit. **(Electromotive force)**
- 3 The increase in the amount and intensity of nuclear radiation in the surrounding environment. **(Radioactive pollution)**

B) What is the importance or use of?

- 1 Catalytic converters in modern cars.
- **To treat harmful gases produced from fuel combustion before releasing them.**
- 2 Variable resistor (sliding rheostat).
- **To control the electric current intensity and the potential difference in a circuit.**

C) Compare between each of the following:

- 1 Positive catalyst and negative catalyst (in terms of the speed of chemical reaction)

Positive catalyst	Negative catalyst
Increases the speed of a chemical reaction	Decreases the speed of a chemical reaction

- 2 Skin color in humans and the skill of playing football (in terms of trait type)

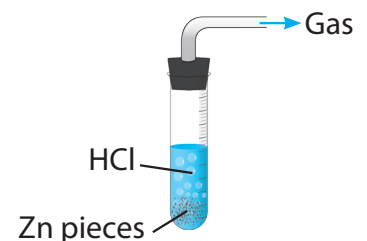
Skin color in humans	Skill of playing football
Genetic trait	Acquired trait

3 A) Put (✓) or (X):

- 1 Mendel allowed pea plants to self-pollinate for several generations to ensure trait purity. (✓)
- 2 The resistance of a conductor through which an electric current intensity of 12 ampere flows when the potential difference across its terminals is 2 volts is 6 ohms. (X)
- 3 When silver is added to hydrochloric acid, silver chloride is formed and hydrogen gas is evolved. (X)

B) Look at the opposite figure, then answer:

- 1 What is the name of the released gas? **Hydrogen gas.**
- 2 What is the name of the formed salt? **Zinc chloride.**



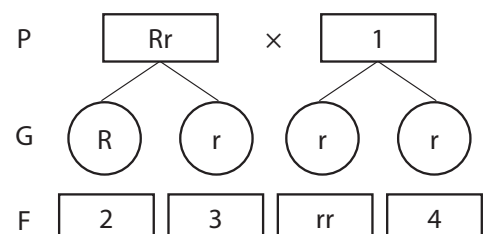
C) The opposite diagram shows cross-pollination between a pea plant with red flowers and another with white flowers. Answer the following:

- 1 Replace the numbers with the appropriate genetic symbols.

1-(rr) 2-(Rr) 3-(Rr) 4-(rr)

- 2 State the percentage of recessive traits.

50%



4 A) Complete the following sentences:

- 1 During emergencies the secretion of **adrenaline** hormone increases.
- 2 Electric cells produce a **direct** current.
- 3 The **oxidase** enzyme is found in sweet potatoes increases the rate of chemical reactions.

B) What happens when ...?

- 1 A lit matchstick is brought near the mouth of a test tube containing heated copper carbonate.
it is extinguished due to the release of carbon dioxide gas.
- 2 Increasing the length of the wire in a sliding rheostat in an electric circuit.
(in terms to the current intensity)
The electric current intensity flowing through the circuit decreases.

C) Give a reason for:

- 1 It is necessary for humans to include iodine in their food.
Because iodine is involved in the formation of the thyroxine hormone, which plays an important role in the food assimilation processes.
- 2 Food is stored in the refrigerator.
Because the low temperature in the refrigerator slows down the chemical reactions caused by bacteria, which leads to spoiling of food.

Model (3)

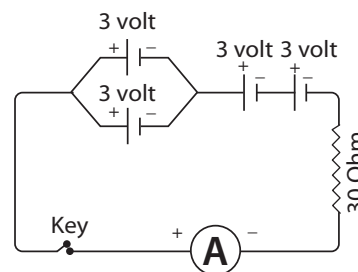
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Marks

1 A) Write the scientific term:

- 1 Traits that cannot be transferred from one generation to another. (**Acquired traits**)
- 2 The change in the concentration of reactants and products per unit of time. (**Rate of chemical reaction**)
- 3 The potential difference between the two poles of the dry cell in an open electrical circuit. (**Electromotive force**)

B) From the opposite electric circuit, write the number indicating each of the following:

- 1 The current intensity passing through the circuit. (**0.3 amperes**)
- 2 The current intensity passing through the circuit if all the dry cells are connected in parallel. (**0.1 amperes**)



C) Mention the use or importance for each of the following:

- 1 Dynamo
- It converts kinetic energy into electrical energy – generates alternating electric current.
- 2 Adrenaline hormone
- It stimulates various body organs for a quick response in emergency situations.

2 A) Complete the following sentences:

- 1 One of the effects of human exposure to high doses of radiation for short periods is the **damage of bone marrow**.
- 2 When sodium hydroxide solution is added to copper sulfate solution, a colorless **sodium sulfate** solution is formed.
- 3 If the work done to transfer an electric charge of 200 coulomb between two points is 2200 joule, the potential difference between the two points is equal **11 volt**.

B) Study the following equations, then answer:



- 1 The name of compound A and its formula: **Sodium chloride (NaCl)**
- 2 The color of the precipitate B and its formula. **Silver chloride (AgCl) (white ppt)**

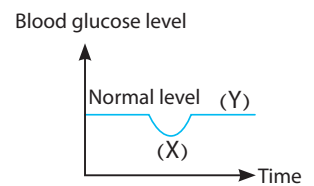
C) Look at the opposite graph, then answer:

- 1 What is the hormone that causes the change in blood sugar concentration from (X) to (Y)?

(Glucagon hormone)

- 2 The gland that secretes this hormone.

(Pancreas gland)



3 A) Cross out the odd word, then mention the relation between the other words:

- 1 Calcium / Silver / Aluminum / Magnesium

(Silver - Elements that can replace hydrogen)

- 2 Ampere / Volt / Ohmmeter / Ohm

(Ohmmeter - Units of measurement)

- 3 Exophthalmoses / Weight loss / Tension / Continuous growth of limb bones

(Continuous growth of limb bones - Symptoms of exophthalmic goiter)

B) The opposite diagram shows the rate of decomposition of hydrogen peroxide.



- 1 Write the name of the compound or element indicated by each number:

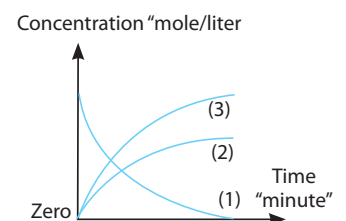
(1) $2\text{H}_2\text{O}_2$ – Hydrogen peroxide

(2) O_2 – Oxygen

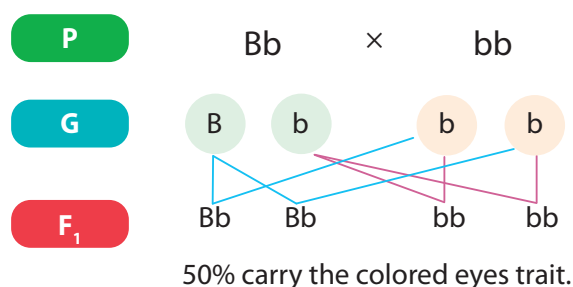
(3) $2\text{H}_2\text{O}$ – Water

- 2 The catalyst used in this reaction:

manganese dioxide . (MnO_2)



C) Explain, based on genetics, the genetic structure of the individuals in the first generation resulting from the cross between a man with hybrid brown eyes (Bb) and a woman with pure colored eyes (bb). Also indicate the percentage of the offspring who will have the colored eyes trait among the resulting generation.



4 A) Put (✓) or (X):

- 1 The genetic structure of a tall pea plant with pure red flowers is (TTRR). (✓)
- 2 The maximum safe radiation dose for workers in the field of radiation is 1 millisievert per year. (X)
- 3 The reaction time of iron rusting is shorter than that of soap production. (X)

B) Write the number that indicates to each of the following:

- 1 The number of electric cells that make up a battery with an electromotive force (e.m.f.) of 9 volt, knowing that all the cells are connected in series and the e.m.f. of each cell is 1.5 volt.

6 cells

- 2 The hereditary traits that Mendel selected for his experiments.

7 traits

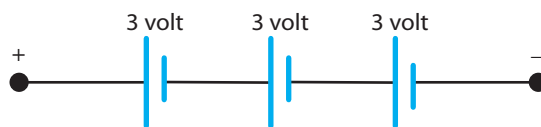
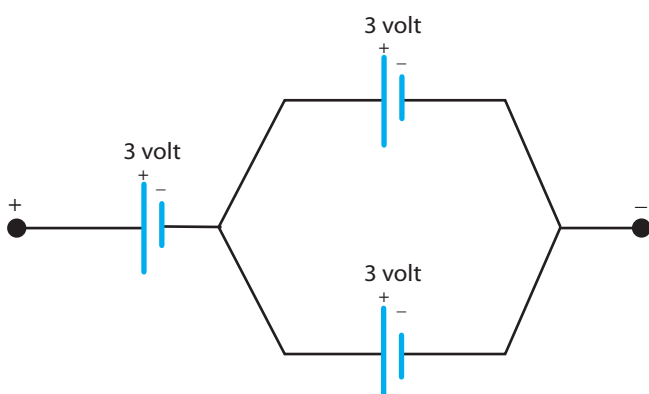
C) You have three electric cells, each with an e.m.f. of 3 volt, a fixed resistance of 10 ohms, and an ammeter. How can you connect them to make the ammeter read ...?

- 1 0.6 ampere

- 2 0.9 ampere

1 $V = R \times I = 10 \times 0.6 = 6 \text{ volts}$

2 $V = R \times I = 10 \times 0.9 = 9 \text{ volts}$



Model (4)

20
Marks

1 A) Correct the underlined words:

- 1 The airbag contains **sodium azide**, which decomposes when there is a sudden change in speed.
- 2 A copper wire with a length of 2 meters carries a current of 10 ampere. If the length of the wire becomes 4 meter while the cross-sectional area remains constant, the current intensity passing through it becomes **5 ampere**.
- 3 A deficiency of **iodine** in food leads to a deficiency of the thyroxine hormone.

B) What is meant by?

- 1 Endocrine Glands.
- **They are ductless glands that secrete their hormone secretions directly into the blood.**
- 2 Neutralization Reaction.
- **It is a reaction between an acid and a base to form a salt and water.**

C) Explain with balanced symbolic equations:

- 1 The effect of heat on copper carbonate (green).
$$\text{CuCO}_3 \xrightarrow{\Delta} \text{CuO} + \text{CO}_2 \uparrow$$
- 2 The reaction of dilute hydrochloric acid with sodium carbonate.
$$\text{Na}_2\text{CO}_3 + 2\text{HCl} \longrightarrow 2\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2 \uparrow$$

2 A) Cross out the odd word:

- 1 Skin color – Blood type – Number of fingers – Swimming
- **(Swimming)**
- 2 Destruction of bone marrow – Changes in the structure of sex chromosomes – Destruction of the nervous system – Destruction of the digestive system
- **Changes in the structure of sex chromosomes**

B) Mention the roles of the following scientists:

- 1 Badel and Tatum
- **They discovered how genes control the expression of the genetic traits.**
- 2 Watson and Crick
- **They proposed the model of the DNA molecule, which consists of two strands twisted around each other in a double helix structure.**

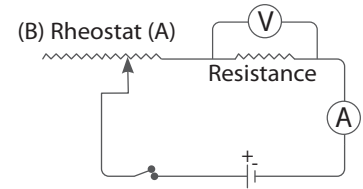
C) In the opposite electric circuit , what happens to each of the following when the rheostat slider is moved from (A) to (B).

- 1) Ammeter reading and voltmeter reading

Both the ammeter and voltmeter readings decrease.

- 2) Resistance value

The resistance value increases.



- 3) A) Mention one example for each of the following:

- 1) A gas that causes a glowing matchstick.

(Oxygen gas)

- 2) A type of radiation activity released during nuclear reactions that can be controlled.

(Artificial radiation activity)

- 3) A hormone responsible for regulating calcium levels in the blood.

(Calcitonin hormone)

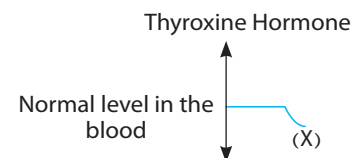
B) A conductor with a resistance of 1000 ohm is connected to a power source with a potential difference of 100 volts. Calculate the amount of charge passing through the conductor during a time of 100 seconds.

$$\text{Current intensity (I)} = \frac{\text{potential difference (V)}}{\text{Resistance (R)}} = \frac{100}{1000} = 0.1 \text{ amperes}$$

$$\text{Quantity of charge (q)} = \text{Current intensity (I)} \times \text{Time (t)} = 0.1 \times 100 = 10 \text{ coulomb}$$

C) The diagram shows a hormone secreted by the thyroid gland into the blood. What disease results from the hormone reaching point (X)

- Simple goiter disease



- 4) A) Correct the underlined words:

- 1) Sodium nitrate decomposes with heat, and nitrogen gas is released.

(Oxygen)

- 2) The first part to be affected when a person is exposed to a large dose of radiation over a short period of time is the stomach.

(Bone marrow)

- 3) An ohmmeter is used to control the potential difference between the two ends of a conductor in an electrical circuit.

(Sliding rheostat).

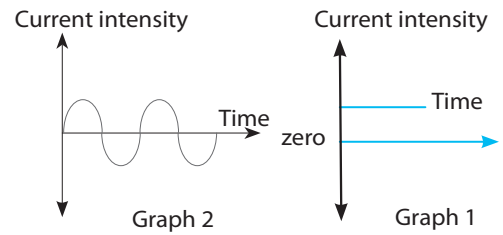
(B) Study the two graphs shown and determine which graph represents:

- 1 A current that is not used in the electroplating process.

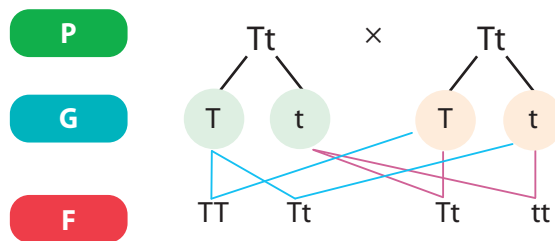
(Graph 2)

- 2 A current produced from the conversion of chemical energy into electrical energy.

(Graph 1)



(C) Explain, based on genetic principles, the result of mating a male and a female fruit fly, both with long wings. The result was 45 long-winged individuals and 15 short-winged individuals, known that the gene for long wings is represented by the symbol (T) and the gene for short wings is represented by the symbol (t):



Model (5)

20
Marks

1 A) Complete the following sentences:

- 1 The simple goitre disease is caused by a deficiency in the secretion of **growth** hormone.
(Thyroxine)
- 2 The unit volt.ampere.second is a unit for **measuring electric potential difference**.
(Work done)
- 3 Aluminium reacts with dilute hydrochloric acid after a period of time due to the presence of a layer of **aluminium chloride**.
(Aluminium oxide)

B) Give a reason for:

- 1 The ability to roll the tongue is a dominant trait in humans.
– **Because the gene for tongue rolling is dominant over the gene for non-rolling when both are present.**
- 2 Radioactive wastes are buried far away from groundwater sources.
– **To prevent radioactive contamination of the water.**

C) Write the balanced symbolic equation for each of the following:

- 1 Thermal decomposition of sodium nitrate:



- 2 The reaction between sodium and water:



2 A) Write the scientific term:

- 1 The state of an electric conductor that shows the transfer of electricity from or to it when it is connected to another conductor
(Electric potential of a conductor)
- 2 A substance that changes the rate of a chemical reaction without being changed itself.
(Catalyst)
- 3 Substances or chemical messengers that regulate and organize biological activities in a living organism.
(Hormones)

B) What happens when?

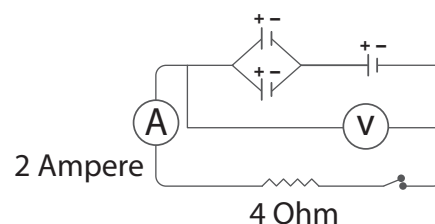
- 1 Mendel left the stigmas of pea plant flowers uncovered during his study of genetic traits.
Cross-pollination will occur.
- 2 The flow of electrons in opposite directions in an electric circuit.
An alternating electric current is generated.

C) In the given diagram, if the cells are identical, calculate:

1 Voltmeter reading

$$V = R \times I = 4 \times 2 = 8 \text{ volt}$$

2 The electromotive force (e.m.f) of each cell = 4 volts



3 A) Complete the following sentences:

1 The phenomenon of radioactivity was discovered by the scientist **Henri Becquerel**

2 The reaction $O^{2-} \longrightarrow O^- + e^-$ represents a process of **oxidation**

3 The trait of attached earlobes is a **recessive** trait in humans.

B) Compare between each of the following:

1 The oxidizing agent and the reducing agent (in terms of loss or gain of electrons).

Oxidizing agent	Reducing agent
It is the element that gains one electron or more.	It is the substance that loses one electron or more.

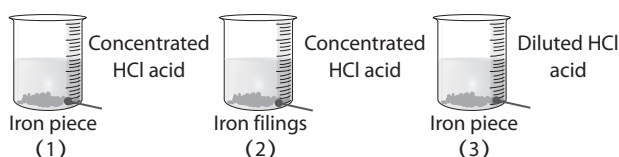
2 The pure individual and the hybrid individual (in terms of definition).

Pure individual	Hybrid individual
It is the individual that carries two identical genes for either the dominant trait or the recessive trait.	It is the individual that carries two different genes one for dominant trait and the other for the recessive trait.

C) Look at the following reactions, then answer:

1 Which of these reactions is the fastest (1, 2, or 3)?

(Number 2)



2 The two factors affecting the speed of this reaction:

– Surface area exposed to the reaction – Concentration of the reactants

4 A) Choose the correct answer:

1 hormone responsible for the appearance of secondary sexual characteristics in females.

- a- **Estrogen** b- Testosterone c- Insulin d- Progesterone

2 is the international unit that measures the radiation absorbed by the human body.

- a- Joule b- Meter c- **Sievert** d- Coulomb

3 If the genetic structure of a child is (bb), the possible genetic structure of the parents is

- a- Bb × BB b- bb × BB c- **Bb × bb** d- BB × BB

B) A conductor carries a current of 0.2 ampere and the potential difference across it is 10 volt. Calculate:

1 The amount of charge passing through it in 5 minutes:

$$q = I \times t = 0.2 \times 5 \times 60 = 60 \text{ coulomb}$$

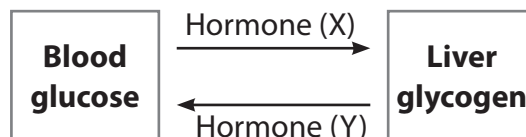
2 The work done in transferring 100 coulomb of charge:

$$W = V \times q = 10 \times 100 = 1000 \text{ Joule}$$

C) Look at the opposite diagram, then answer:

1 What are the names of hormone (X) and hormone (Y)?

(X) = **Insulin** (Y) = **Glucagon**

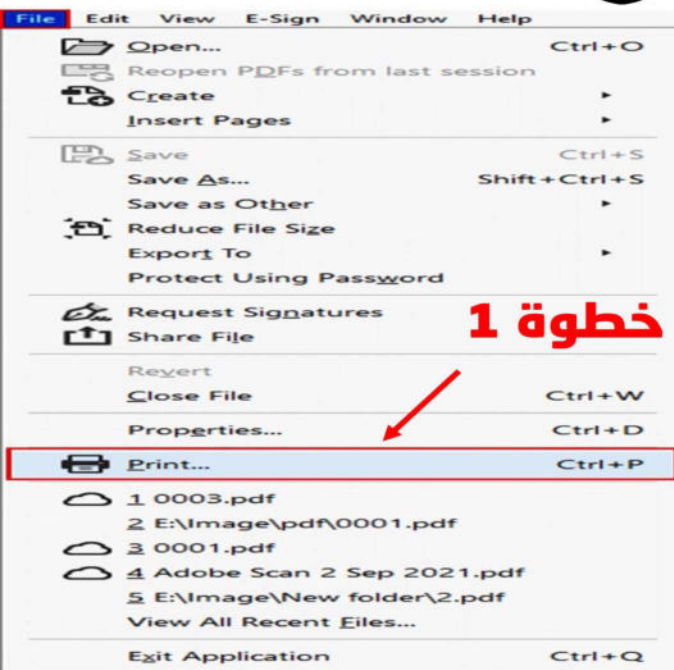


2 What disease results from a deficiency of hormone (Y)?

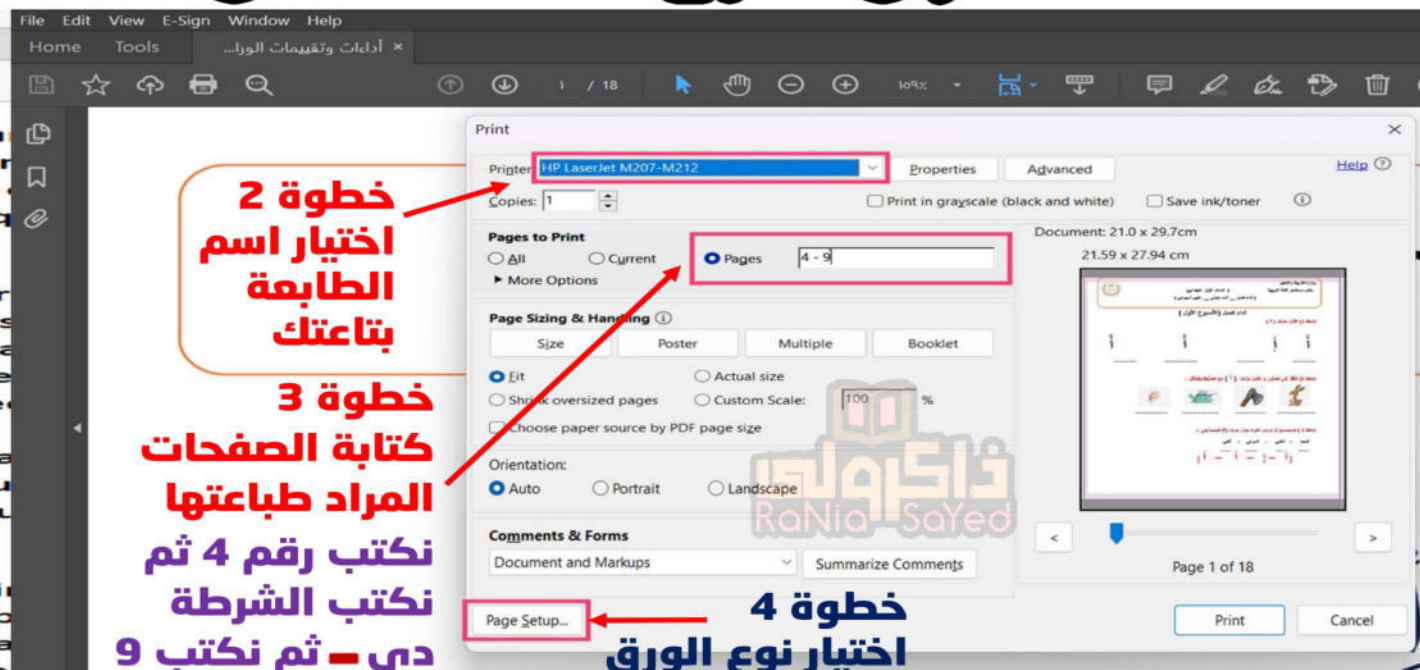
Diabetes mellitus disease.

كيفية طباعة صفحات معينة من ملف معين

مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



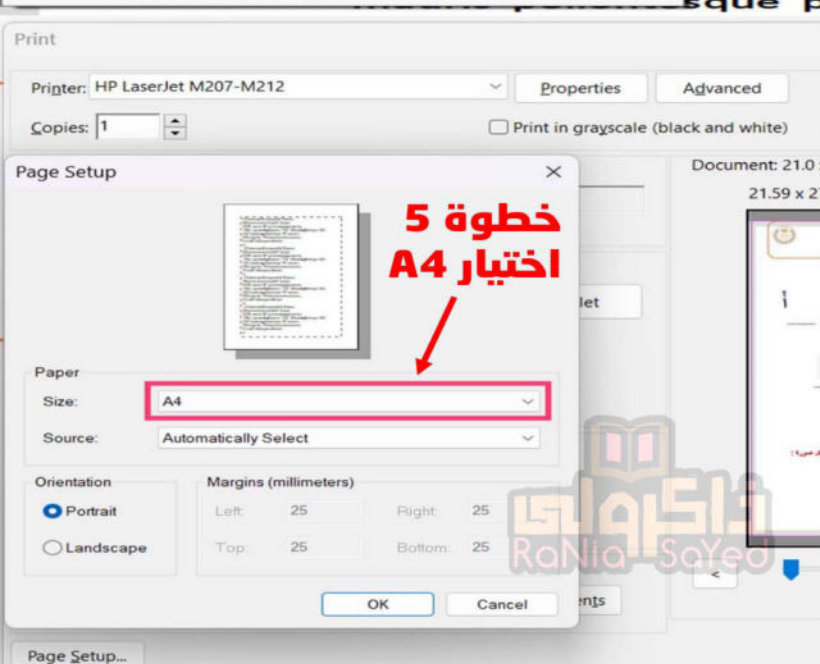
خطوة 1



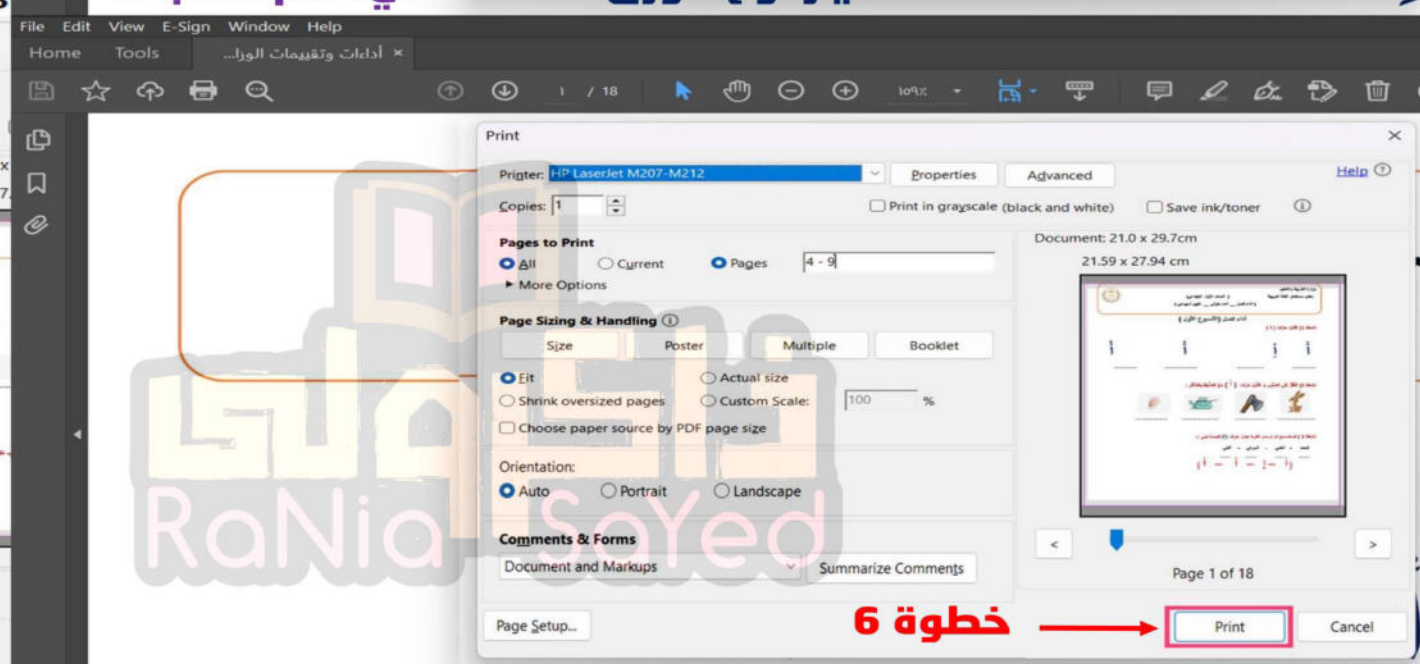
خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6

حمل الآن

مجاناً وحصرياً

امتحانات رقم (2)

الترم الثاني



Question 1 :-

Write the Scientific Term

1- A chemical process resulting in an increase in the hydrogen content of a substance.

2- The work required to move a charge of 1 coulomb between two points with a potential difference of 1 volt.

3- Cells that are responsible for transmitting hereditary information from parents to offspring.

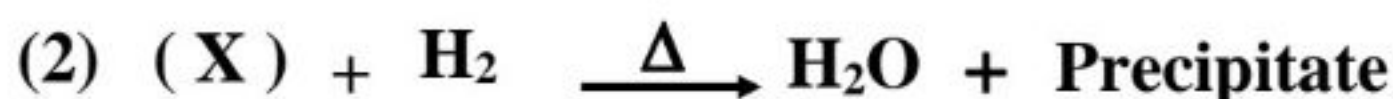
Provide Scientific Explanations

4- why ionic compounds react faster than covalent compounds.

5- why alternating current (AC) is generally preferred over direct current (DC).

6-Explain the appearance of green-seeded pea plants when a yellow-seeded plant is crossed with a green-seeded plant.

7-From the following two chemical reactions:



a) Identify the gas produced and state its effect when passing through clear limewater.

(b) Identify the precipitate formed and specify the type of chemical reaction taking place in Reaction (2).

8- You are provided with three cells:

Cell 1: 1.5 V, Cell 2: 1.5 V and Cell 3: 3 V

Using only a diagram, illustrate how to connect the cells to obtain:

a) A battery with total electromotive force (EMF) of 3 volts.

b) A battery with total electromotive force (EMF) of 4.5 volts.

Question 2:

Choose the Correct Answer

9- "Among the Mendelian recessive traits in the human body"

a- Presence of dimples

b- Presence of freckles

c- Curly hair

d- Detached earlobes

10- Genetically modified rice (Golden Rice) has been engineered to produce:

(a) Vitamin A

(b) Melanin

(c) Folic acid

(d) Carotene

11 – In the given diagram, the secretion of the hormone glucagon begins at point

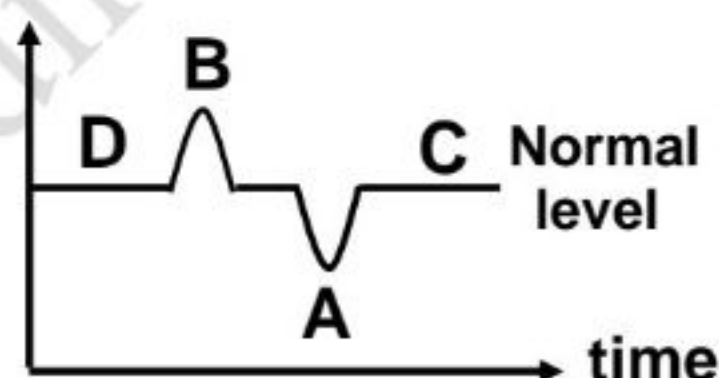
a- A

b- B

c- C

d- D

The blood sugar level

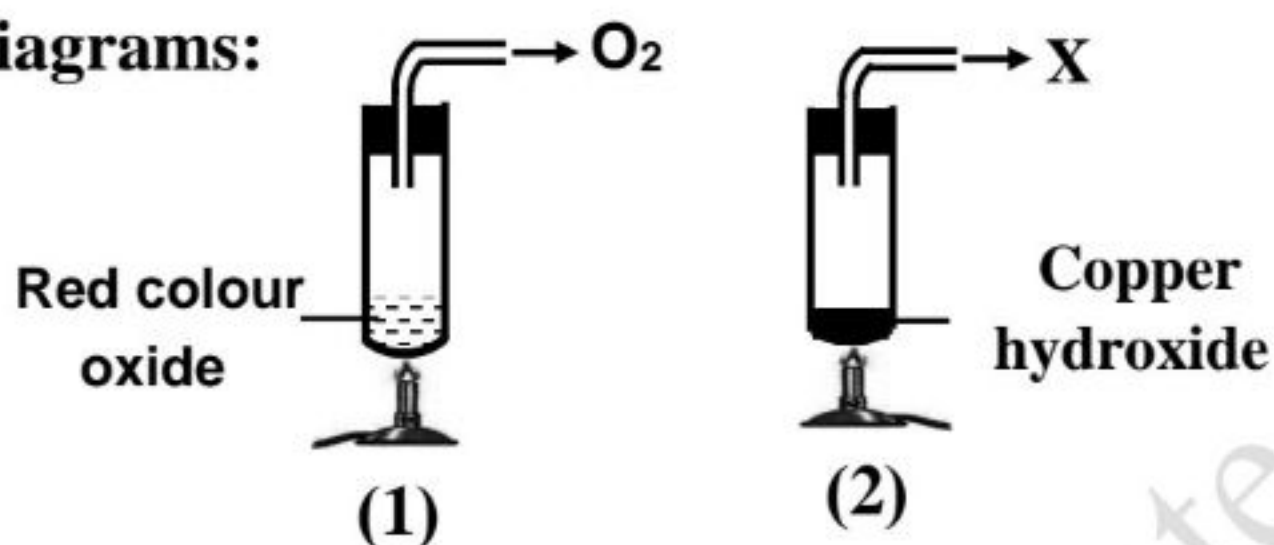


12-What happens when sodium hydroxide reacts with dilute hydrochloric acid followed by heating the resultant solution? Support your answer by writing the balanced chemical equation.

13- What are the consequences of alterations in human sex chromosomes due to exposure to nuclear radiation?

12- If the current through a conductor is doubled at constant temperature, how is the resistance affected?

15- Given the following diagrams:



a) Name the liquid metal formed after heating and describe its color.

(b) Write the balanced chemical equation for Reaction (2).

16- Calculate the total electric charge passing through a conductor with a resistance of 2200 ohms over a period of 2 minutes when connected to a 220-volt source.

Question 3:

Complete the following Sentences

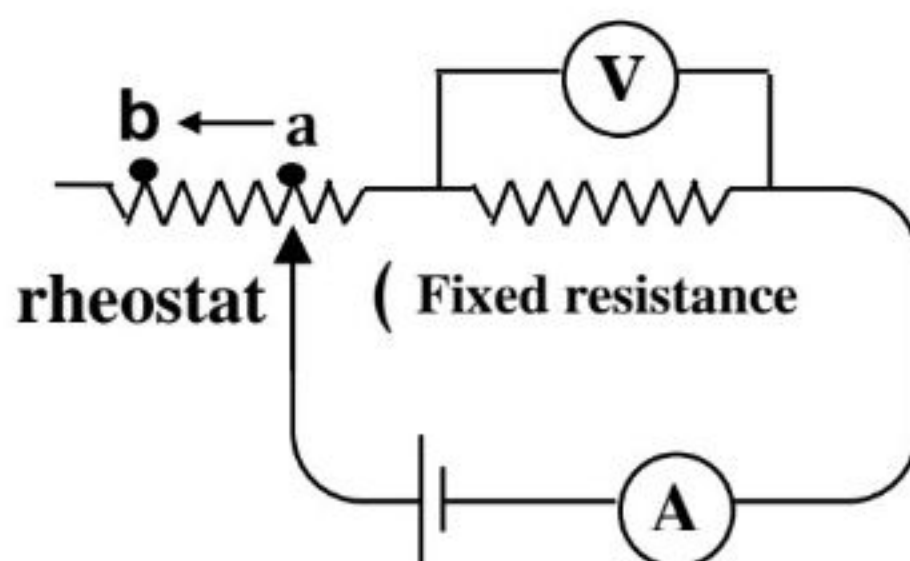
17- When a positive catalyst is used, the activation energy required for the chemical reaction _____, while the mass of the catalyst _____.

18- A _____ is used to regulate the electric current in a circuit, whereas a _____ measures the electric charge passing per second .

19- When crossing two heterozygous individuals ($Bb \times Bb$), the ratio of hybrid offspring to purebred offspring is _____ : _____.

20- Suggest two methods to increase the rate of reaction between a piece of iron and dilute hydrochloric acid:

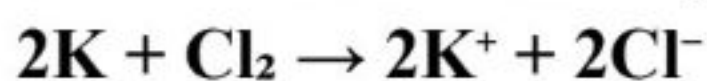
21-In the adjacent electric circuit,



what happens to the readings of the ammeter and the voltmeter when the sliding contact moves from point (A) to point (B)?

22- A man with curly hair marries a woman with straight hair. If the offspring ratio is 1 curly-haired : 1 straight-haired, explain genetically the genotypes of both parents and their offspring. (Use "H" for the dominant allele and "h" for the recessive allele.)

23- Given the following chemical reaction:



- a) Identify the oxidation and reduction processes.**
- b) Identify the oxidizing agent and the reducing agent, explaining your answer.**

24-You are provided with the following materials in the laboratory: (Sodium chloride solution / Silver nitrate solution / Flame source)

Write balanced symbolic equations to obtain:

a) A white precipitate.

(b) A gas that increases the glow of a burning splint.

Question 4:

Correct the Underlined Errors

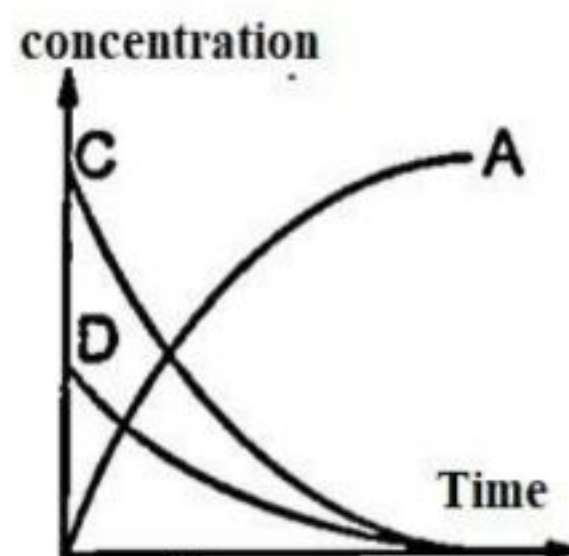
25- The electromotive force of several cells connected in parallel is less than that of a single cell.

26- Each gamete carries three factors for every trait.

27- The target cells of the hormone insulin are the cells of the stomach

28-The adjacent graph shows the reaction between sodium and chlorine gas.

Explain what curves (A) and (D) represent.

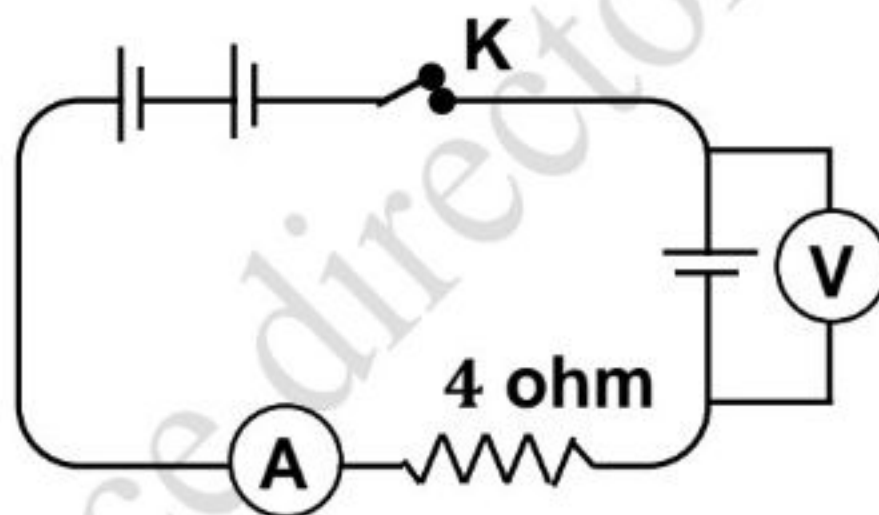


29-Under what condition does the potential difference between two points become zero?

30-Sometimes a gene fails to express a specific trait. Explain the possible reasons.

31- Using a balanced chemical equation, describe the reaction between aluminum filings and dilute hydrochloric acid. Explain why aluminum initially resists reaction.

**32- In the given electric circuit, if each cell provides 2 volts:
For the connected circuit:**



a) Ammeter reading:

Voltmeter reading:

(b) What changes occur to the ammeter and voltmeter readings when switch K is opened?

Ammeter reading:

Voltmeter reading:

Question One:

Write the scientific term for the following statements:

1- The descending arrangement of metallic elements based on their chemical reactivity.

.....

2- The potential difference between the two terminals of a power source in an open electric circuit.

.....

3- The gene that can only express its trait when paired with an identical gene.

.....

What happens in the following cases?

4- Bringing a lit matchstick close to the mouth of a test tube containing red mercury oxide while heating it.

.....

5- The disappearance or weakening of the attractive forces between the nucleus and the valence electrons in an atom.

.....

6- Crossing a pure yellow-seed pea plant (YY) with a green-seed pea plant (yy).

.....

.....

Answer the following:

7- If (A), (B), and (C) are three different chemical compounds represented by the reaction:



and (B) is a black-colored oxide, and (C) is a gas that turns limewater milky,

write the balanced chemical symbolic equation for the compounds based on your studies.

.....

.....

8- Calculate the work done to transfer an electric charge of

100 coulombs through a conductor of resistance 110 ohms, with a current of 2 amperes.

.....

.....

10

Question Two:

Complete the following sentences:

9. In pea plants, the green color is dominant over,
while the yellow color is dominant over
- 10-If a male and a female with genetic makeup (Bb) mate, the ratio of
offspring with genotype (BB) to the total offspring will be
.....
- 11-..... begin secreting their hormones around puberty.
-

Give reasons for the following:

12- A red precipitate forms when zinc metal is added to copper sulfate solution.

.....
.....

13- A sliding rheostat is used in some electrical circuits.

.....
.....

14- Mendel's First Law is known as the Law of Segregation.

.....
.....

Answer the following:

15-Arrange the following elements in descending order according to their chemical reactivity:

(Pb / Na / Al / Ag / Ca)

.....

.....

16-You have three electric cells, each with an emf (electromotive force) of 2 volts.

Draw a diagram showing how to connect them to obtain:

(a) 6 volts

(b) 4 volts

.....

.....

.....

.....

.....

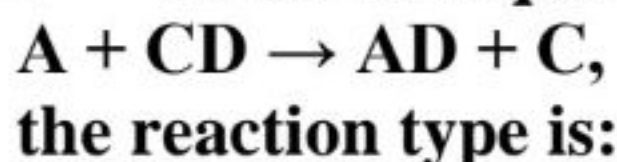
.....

10

Question Three:

Choose the correct answer from the given choices:

17. From the equation:



a- Neutralization

b-Thermal decomposition

c-Double displacement

d-Single displacement

.....

18- Ohm's Law relates three physical quantities:

- (A) measured in coulombs per second,
- (B) measured in volts per ampere,
- (C) measured in joules per coulomb.

The correct formula of Ohm's Law is:

a) $A = B \times C$

b) $A = \frac{B}{C}$

c) $A \times C = B$

d) $C = \frac{B}{A}$

.....

19- The gland that secretes the hormone regulating water content in the body is the:

a) Thyroid gland

b) Pituitary gland

c) Adrenal glands

d) Pancreas

.....

State the function (importance) of each of the following:

20) Airbag.

.....

21) Ammeter.

.....

22) Genes.

.....



In the following reaction:

a) identify the oxidation and reduction processes.

.....

.....

.....

.....

b)
The oxidizing agent is:

The reducing agent is:

24-How can you obtain hydrogen gas using two different methods along with writing the chemical equations?

.....

.....

.....

.....

Question Four:

Correct the underlined errors in the following statements:

25- If the resistance of a conductor doubles at constant voltage, the current doubles.

.....

26-When the secretion of thyroxine decreases during childhood, the person develops gigantism.

.....

27- Enzymes are secreted in the body by specialized organs called endocrine glands.

.....

Answer the following:

28-Name the gas evolved when sodium carbonate reacts with dilute hydrochloric acid.

.....

29-Name the scientist whose theories formed the basis for the development of the atomic bomb.

.....

30-Name the hormone whose secretion defect leads to dwarfism.

.....

31-Study the following reactions and answer:



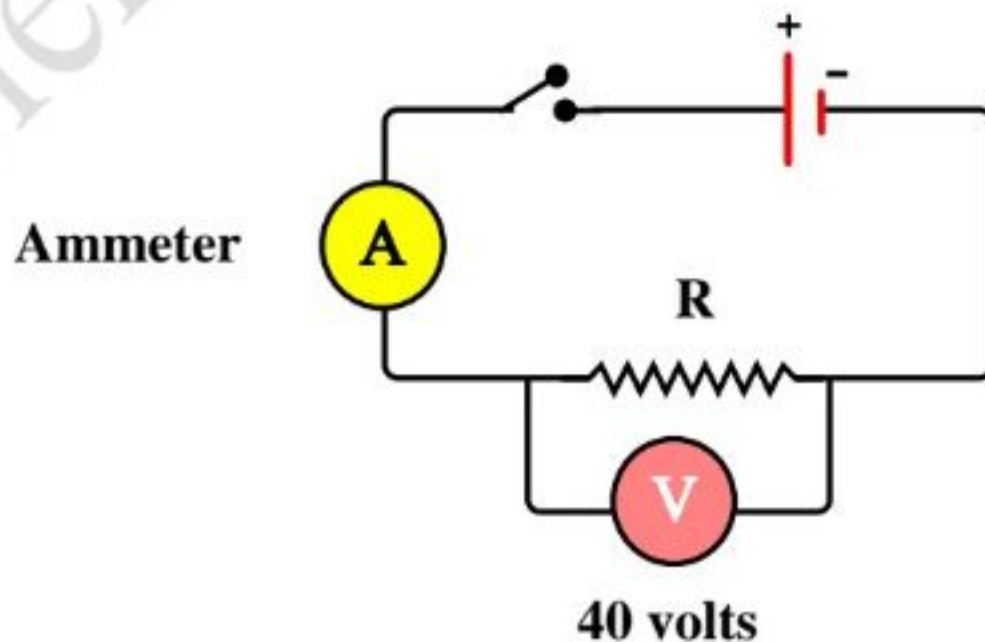
a) Name the compound A, B

.....

b) What is the color of the precipitate?

.....

32- From the opposite electric circuit



Calculate the electric current flowing in the circuit if the work done to transfer the electric charge is 320 joules, and the time taken is 4 seconds.

.....
.....
.....
.....

Model (3)

First Question:

Write the scientific term.

(1) – A chemical process where an element's atom gains one or more electrons during a chemical reaction:

.....

(2) – The resistance of a conductor that allows a current of 1 ampere to flow when the voltage across it is 1 volt:

.....

(3) – Parts of DNA located on chromosomes that control an individual's hereditary traits:

.....

Give reasons for the following:

(4) – Metals are strong reducing agents:

.....

(5) – Alternating current (AC) is preferred over direct current (DC):

.....

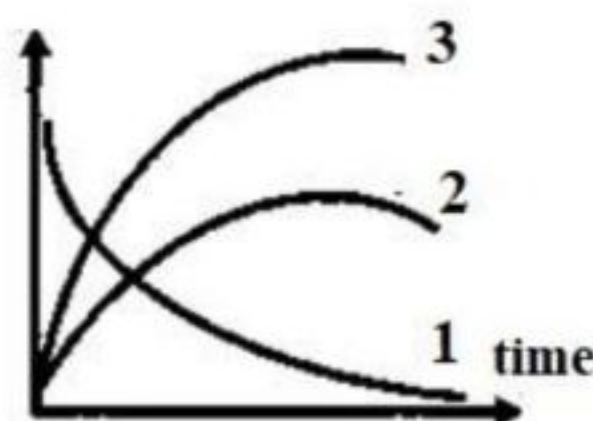
(6) – Mendel chose the pea plant for his experiments:

.....

(7) – The following graph represents the relationship between concentration and time for the decomposition of sulfur trioxide according to the equation:



concentration



a) Identify what each line represents from the chemical equation:

Line (1) represents:

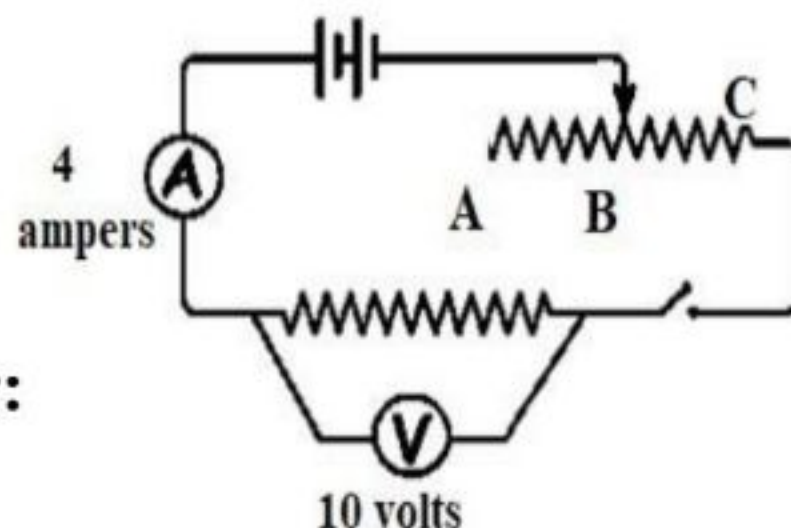
Line (2) represents:

Line (3) represents:

What is the concentration of SO_2 at the end of the reaction?

.....

(8) – From the following diagram, answer:



a) Calculate the value of the fixed resistor:

.....

b) Indicate where to move the slider relative to points (A) and (C) to obtain the maximum current:

.....

Second Question:

Shade the correct answer:

**(9) – According to Mendel’s first law, the factors of the hereditary trait:
a- duplicate b- merge c- segregate d- disappear**

.....

(10) – A pea plant that is tall and has white flowers is heterozygous with a genotype (Tt rr). Which of the following represents one of its gametes after the segregation of factors?

a- Tt b- Rr c- Tr d- tt

.....

(11) – The regulation of blood glucose levels is due to the action of two hormones:

**a- Insulin and estrogen b- Glucagon and calcitonin
c- Insulin and glucagon d- Insulin and adrenaline**

.....

(12) – In the school laboratory, there are two tubes: one containing dilute hydrochloric acid and the other concentrated hydrochloric acid. How would you distinguish between them using two equal masses of magnesium?

.....

.....

.....

(13) – A recorder operates at a voltage of 9 volts and is to be run using batteries, each with an EMF of 1.5 volts.

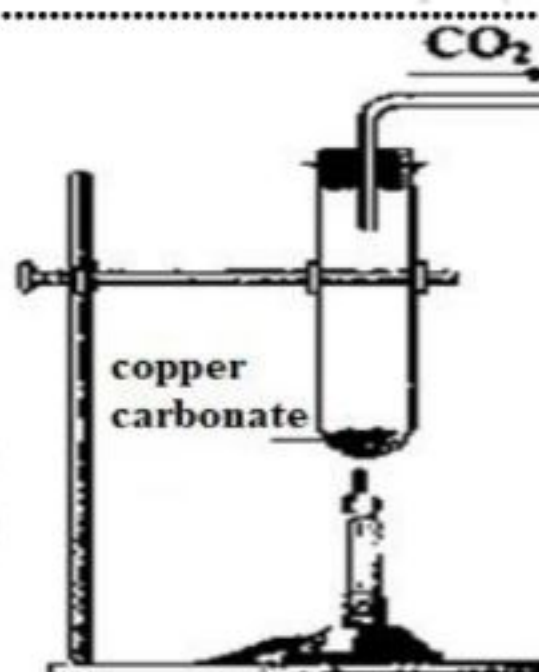
What is the minimum number of batteries needed?

.....

(14) – What happens if the number of neutrons in an atomic nucleus exceeds the number needed for stability?

.....

(15) – In the given figure,
(green copper carbonate) is heated:



Write the chemical equation representing the reaction:

.....

How would you detect the gas released?

.....

(16) – If the amount of work done to move 600 coulombs of charge between two points over 5 minutes is 3600 joules:

• Calculate:

a) The current intensity

b) The electric potential difference

.....

Third Question:

Find the odd word out:

(17) – Reactant concentration – Nature of reactants

– Nature of products – Reaction temperature

.....

(18) – Coulomb/second – Ampere – Joule/coulomb – Volt/ohm

.....

(19) – Adrenaline – Insulin – Oxidase – Glucagon

.....

(20) – State the scientific reason:

Ionic compound reactions are faster than covalent compound reactions:

.....

(21) – Draw the graph representing alternating current:

.....

(22) – Suha has two cats with long hair: one purebred for long hair and the other hybrid. (Long hair is dominant.)

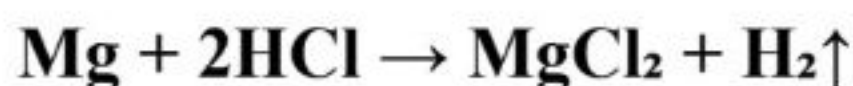
How can you distinguish between them by mating each with a short-haired cat?

.....

.....

.....

(23) – In the following reaction:



- **indicate the oxidation and reduction processes.**

.....

.....

- **The oxidizing agent is:**

- **The reducing agent is:**

(24) –

Iron cube + Dilute hydrochloric acid $\rightarrow$ Iron(II) chloride + Hydrogen gas

How can you increase the rate of this chemical reaction by two different methods ?

.....

.....

.....

.....

Fourth Question:

Mark (✓) or (X)

(25) – Changes to the chemical composition of hemoglobin due to radiation exposure make it unable to carry nitrogen. ()

.....

(26) – The element iodine is part of the composition of the hormone thyroxine. ()

.....

(27) – Target cells are often located near the gland that secretes the hormone targeting them. ()

.....

(28) – What happens if copper sulfate solution is stored in a container made of aluminum?

.....

(29) – Compare physical and genetic changes resulting from exposure to small amounts of radiation over a long period in terms of damage.

.....

(30) – How many plants with red flowers and how many with white flowers would result from crossing a pea plant with genotype (RR) and another with (Rr), if the total offspring is 300?

Number of red-flowered plants =

Number of white-flowered plants =

(31) – Define each of the following:

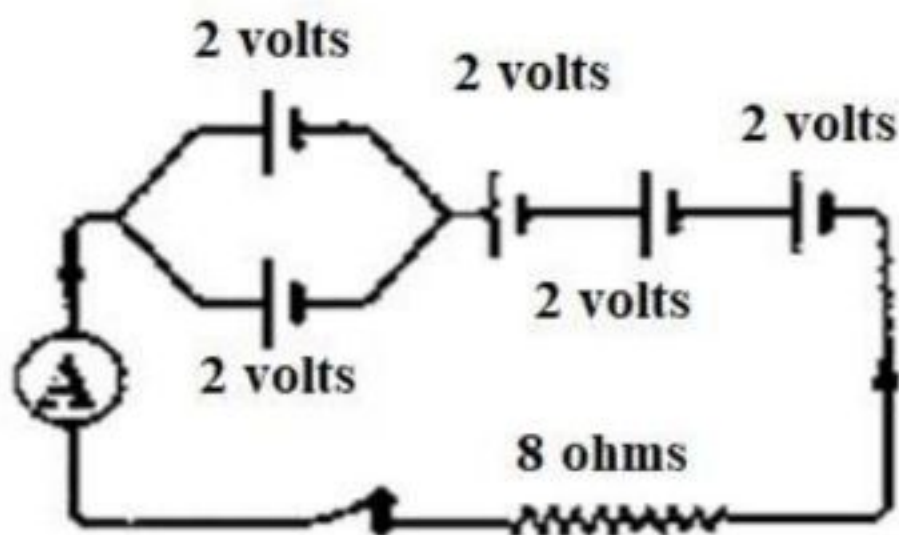
Catalyst:

.....

Neutralization reactions:

.....

1. (32) – From the following diagram:



Calculate the electromotive force (EMF) of the battery:

.....

Calculate the reading on the ammeter:

.....

.....

Question One:-

Write the scientific term for:

1- The descending order arrangement of metallic elements according to their chemical reactivity

.....

2-The ratio between the total work done and the amount of electric charge passed between two points

.....

3-A hormonal disorder resulting in the cells' inability to use glucose due to decreased secretion of insulin

.....

Give reasoning for the following:

4-A black precipitate forms when copper hydroxide solution is heated

.....

.....

5- Alternating current is preferred over direct current

.....

.....

6- When a pure tall pea plant is cross-pollinated with a short pea plant, all the offspring in the first generation are tall.

.....

.....

7- Copper sulphate solution is not stored in iron containers

.....

.....

8- A variable resistor is used in some electric circuits

.....

.....

10

Question Two :-

Choose the correct answer:-

9-The two factors of the genetic trait are similar in the individual.....

- a) Pure
- b) Hybrid
- c)recessive
- d)Pure and recessive

10- The hormone that controls the level of calcium in the blood is the hormone

- a) Calcitonin.
- B) hyroxine
- b) Insulin
- d).Adrenaline

11-The presence of freckles is expressed by the symbol

- a) Rr
- b) rr
- c) RR
- d) Ww

Mention the importance of:

12 - Catalytic converter

.....

.....

.....

13- Calculate the potential difference between the two ends of the current conductor passing through it 5 A in a time of 10 seconds if the work is 200 joules

.....

.....

.....

14- You have four electric cells of 2.5 volts each, explain how you can get batteries for them:

1) 10 V

2) 7.5 V

3) 5 V (in two ways)

.....

.....

.....

.....

.....

15- Compare between:

heating of Mercury oxide /heating of copper hydroxide

.....

.....

.....

.....

16 - electrical device that works on a potential difference of 220 volts and resistance of 20,ohms, calculate the current intensity and amount of electricity passing through 5 sec

.....

.....

.....

Question Three:-

Complete the following sentences

17- At the beginning of the reaction, the concentration of the reactants is

18- Volt =..... $\times$ = $\div$

19 – When mating two hybrid individuals for the same pair of contrasting traits, the ratio in the resulting generation

20- Explain the balanced chemical equations after adding hydrochloric acid to

A - Zinc

.....

B -Sodium hydroxide

.....

What happens in the following cases:

21 - Electrons in a conductor move in opposite directions

.....

.....

22-If a black mouse(Bb) mates with a brown female (bb),explain on the base of genetic color and the proportions of the resulting number of mice in the first generation

.....

.....

.....

.....

23- Compare between:

Ionic compounds and covalent compounds "in terms of reaction speed"

.....

.....

.....

24- In the opposite form

1- What is the name of the rising gas

.....

2- What kind of interaction

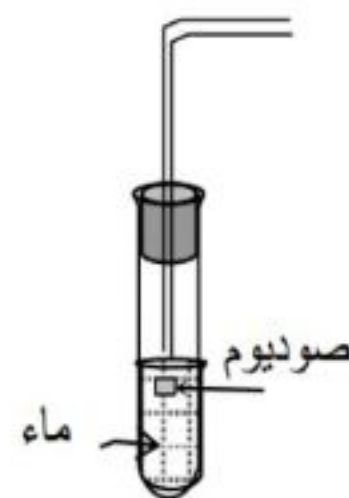
.....

3- Write the reaction equation

.....

4-What are the factors affecting the rate of chemical reaction

.....



Question Four

Mark (✓) or error (×) with correction

25 - The measuring unit of the amount of electric charge is amperes × seconds . ()

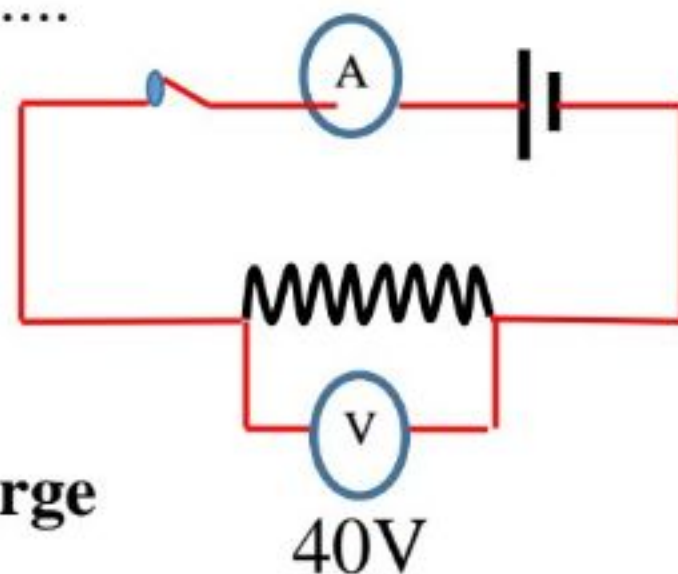
26 - gigantism is a continuous growth in the bones of the skull as a result of lack of growth hormone in childhood ()

27- Thyroxine is a chemical message that controls and regulates some vital activities and functions in the body ()

28 - What happens in the following cases : -

- 1) Put tape of brilliant magnesium in a solution of copper blue sulfate for a long time

29- Calculate the current intensity that passing through the corresponding circuit , given the work done to transfer the electric charge is 240 joules and the time of transmission of the electric charge is 2 seconds



30 – Use the following symbols to express the product of mating between a short-stemmed pea plant (tt) with a long-stemmed pea plant (TT)

.....

.....

.....

31. Compare between Reduction and Oxidation “in traditional concept”

.....

.....

.....

32. What happens when:

Increase the length of the sliding rheostat wire in the relative "current"

.....

.....

.....

Question one:

Write the scientific term:

1-Breaking the bonds between the molecules of the reactants and forming new bonds between the molecules of the resulting substances
.....

**2 - unit of measurement equivalent to
(ohms $\times$ Amper $\times$ Coulomb)**
.....

**3 – traits carried by the parents if the result
of mating is (36) individuals who bear the status of one of the parents
and (12) individuals who bear the status of the other father**
.....
.....

Explain the following

4-The use of catalysts in some chemical reactions
.....

5- Some elements are called radioactive elements
.....
.....

**6-The recessive genetic trait does not appear permanently in members
of the resulting generations**
.....

7-What happens when/ add sodium chloride solution to silver with written chemical equation.

.....

.....

8-A conductor with a resistance of 50 ohms and the amount of electricity flowing in it is 40 Coulombs and the potential difference between the terminals of 250 volts Calculate the time required for the flow of the amount of electricity

.....

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.....

.....

10

Question Two:

Choose the correct answer

9 -The first to explain the mechanism of transmission of traits from parents to children

- a)Watson b) Mendel c) Tatum d) Creek**
-

10 -The short-stem characteristic appears in the pea plant of all the following hybrids except

- a)TT X Tt b) Tt X Tt c) Tt X tt d) tt X tt**
-

11 -Both the hormone insulin and the hormone glucagon agree in

- | | |
|---|-----------------------------------|
| a)Function | b) Increased blood glucose |
| c) Glycogen storage in the liver | d)structure |
-

12 -Identify the oxidizing agent and the reducing agent with the cause



13 -Calculate the Work required to transmit an amount of electricity of 80 coulombs through conductor knowing that its potential difference between two ends is 1.5 volts

.....

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.....

.....

14 -Calculate the number of electric cells that make up a battery with a (12) -volt emf, knowing that its cells are identical and connected together in series, and the emf e for each one is 1.5 volts.

.....

.....

.....

.....

15 -Illustrated by the balanced symbolic equations: heating mercury oxide and the type of reaction..

.....

.....

16 -If a 2-ampere electric current passes through a wire with potential difference between its two ends of 220 volts , calculate the obstruction that current passing through the wire

.....

.....

.....

.....

Question Three

Complete the following phrases

**17-Neutralization is the reaction of an acid with alkali1 to form
and**

.....

**18 -When the work done to transfer an amount of electricity is doubled
and the amount of electricity is reduced by half, the potential
difference**

.....

**19 -Hormones released near puberty and appearance secondary sexual
characteristicsAnd.....**

.....

20 -What's meant by thermal decomposition reactions

.....

.....

**21-compare between direct current (D.C) and alternating current
(A.C) by graph**

.....

.....

22 -When two pea plants are crossed, one with red flowers and the other with white flowers, the offspring appeared with 50% white flowers Explain, based on genetics, the genotype of both the parents and the resulting offspring, knowing that the dominant gene is represented by (R) and the recessive gene by (r)

.....

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.....

.....



Compound (A) when exposed to heat dissolves into copper oxide and a gas that turbid lime water Identify compounds (A) and (B) and then write the equation

.....

.....

.....

24 -What is the result of / a sudden and rapid decrease in the speed of a car Write the chemical equation.

.....

.....

.....

Question Four-:

Correct the underline words

25 –if the fixed resistor burns out in a circuit applying Ohm’s law, the ammeter reading will be infinite.

.....

26 -thyroid gland does not start secreting hormones until after a period of time of not less than 10 years

.....

27 -Sodium has a role in releasing the energy necessary for the body from nutrients

.....

28 -Leave a wire of iron its mass of 5 gm as well as iron filings with the same mass in humid place which of them rusts faster than the other with explanation

.....

.....

29 -You have four electric columns with a motive force of 2 volts each Illustrate in the diagram how to connect them together to get a battery with a motive force of 4 volts

.....

.....

.....

.....

30 -In the beet plant, the swollen roots (M) is a dominant on the weak roots factor and the red color factor R is dominant on the white color factor Find the genetic and phenotypic structures of the parents if the result is 3 individuals with red swollen roots, one with red weak roots, 3 individuals with white swollen roots and one with white weak roots

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.....

.....

.....

31 -Zinc is faster than magnesium in replacing copper in copper sulfate solution, how true is this statement with explanation

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.....

32 -Two metal wires of the same material resist the second wire three times the first and the length of the first wire was 2 meters and its resistance was 1 ohm, so calculate the resistance and length of the second wire .

.....

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حمل الآن

مجاناً وحصرياً

امتحانات رقم (3)

الترم الثاني





محافظة القاهرة مديرية التربية والتعليم

توجيه عام العلوم.....

النموذج الاسترشادي الأول

مادة : .. علوم (تراجم - لغة انجليزية) ..

العام الدراسي 2025 / 2026

Question 1:

- Complete the following:

- 1 – The speed of a chemical reaction is the change in the of the reactants and products at a unit time.
- 2 – In the electric circuit , the voltmeter is connected in
- 3 – are parts of DNA which are present on the chromosomes and controls the hereditary traits of the individual.

- What happens in the following cases:

- 4 – Increasing the temperature of the chemical reaction.

.....
.....

- 5 – Connecting two charged conductors of the same electrical potential with a wire.

.....
.....

- 6 – The gene cannot produce its specific enzyme.

.....
.....

(C) Explain with balanced symbolic equations each of the following:

- 7 – Passing Hydrogen gas over red hot copper oxide

(Illustrating the oxidizing agent and the reducing agent)

.....
.....

- 8 – The effect of heat on Copper II Sulphate

(Illustrating the change in colour)

.....
.....

Question 2:

- Write the scientific term for the following statements:

- 9 – The chemical substance produced by the body of living organism that acts as a catalyst to increase the rate of biological reactions. (.....)
- 10 – The electric current intensity passing through a circuit when a charge of one coulomb passes through a given cross section in one second. (.....)
- 11 – It is chemically composed of nucleic acid and protein. (.....)

- Give reasons for the following:

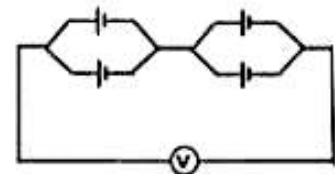
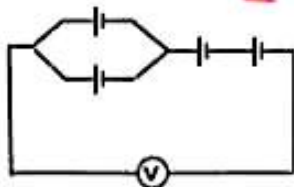
- 12 – Sodium replaces hydrogen of water.

- 13– Most metals act as reducing agents.

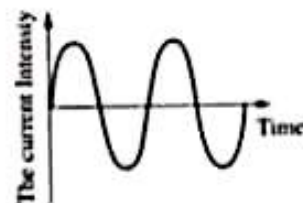
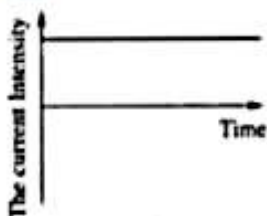
- 14 – Pituitary gland is called the master gland.

- 15- Given that the electromotive force of each cell in the following circuit is 1.5 volt.

Find the reading of voltmeter in each of the following circuits :



- 16- What is the type of current in each of the following figures :



Question 3:

- Choose the correct answer:

17 – Some metal nitrates decompose upon heating into the metal nitrite and a gas.....

- A – Hydrogen B – Nitrogen C - Oxygen D - Chlorine

18 - When sodium chloride solution is added to silver nitrate solution, a precipitate of silver chloride forms, the color of which is.....

- A - Silver B - White C - Red D - Black

19 - The unit of measurement for electrical resistance is

- A - Volt B - Coulomb C - Ampere D - Ohm.

- Extract the odd word out in each of the following:

20 – Radium / Iron / Cesium / Zirconium The odd word out (.....)

21– Skin colour / Hair colour / Learning swimming / Blood groups
The odd word out (.....)

22 – Glucagon hormone / Estrogen hormone / Testosterone hormone / Progesterone hormone
The odd word out (.....)

- Answer the following:

23 – Calculate the value of work done to transfer a quantity of electricity of (200 Coulombs) through a conductor if the potential difference between its ends is (220 Volts).

.....
.....
.....

24 – Explain with genetic bases : the traits of the individuals resulted from mating between hybrid black male mouse and hybrid black female mouse , If the black colour gene (B) dominates over the brown colour gene (b)

.....
.....
.....
.....

Question 4:

- Correct the underlined words:

25. A substance that changes the rate of a reaction but is not itself changed is called an oxidizing agent.

26. In a dry cell, kinetic energy is converted into electrical energy.

27. A hereditary trait is not passed from one generation to the next.

- Mention the importance of each of the following:

28- Manganese Dioxide.

.....

29 - Direct current.

.....

30 - Ohmmeter.

.....

- Compare between:

31 - Covalent compounds and ionic compounds

Point of Comparison	Covalent compounds	Ionic compounds
Speed of chemical reaction with reason		

32 - Thyroxin hormone and Calcitonin hormone

Point of Comparison	Thyroxin hormone	Calcitonin hormone
Function		

انتهت الاسئلة

Question 1

A) Write the scientific term for each of the following statements:

1- Breaking molecules of the reactants and the forming of new products.

(.....)

2- Chemical process where atom gains one or more electron.

(.....)

3- Amount of electric charges that flow in a conductor in a certain time.

(.....)

4- The characters ready transmitted from one generation to another.

(.....)

5- A gland secretes a hormone to regulate growth of the human sexual organs.

(.....)

6- Resistance of a conductor allows of an electric current of (1) Ampere when the potential difference between its two ends is 1 Volt

(.....)

B) Illustrate by balanced chemical equations the following reactions:

1- The reaction between hydrochloric acid and sodium hydroxide.

.....
.....

2- Adding silver nitrate solution to sodium chloride solution.

.....
.....

.C) You have four similar electric cells, the potential difference of each 1.2 volt, and show by diagram the method of connection together to obtain a battery its electromotive force

a- 1.2 volt

b- 4.8 volt

c- 2.4 volt

.....
.....
.....
.....

Question 2

.....A) Define each of the following:

1- Electric current intensity.

2- Diabetes

B) By using symbolic formulae complete and balance the following equations :

$$1- \text{.....} = 2\text{Hg} + \text{O}_2$$
$$2- 2\text{Na NO}_3 = \dots\dots\dots + \text{O}_2$$

3- Na OH + = 2Na Cl + H2O

C) What is the scientific idea on which:

-the air bag in cars is dew signed on the occurrence of the car crash they get vacuumed and sodium nitride decomposes forming nitrogen that fills the air bag on crashing.

$$2 \text{Na}_3\text{N} = 2\text{Na} + 3\text{N}_2$$

Question 3

A) What would happen?

1- When thyroxin hormone increases (liberation of energy increases)

.....

.....

.....

.....

.....

.....

2-The reading of both ammeter and voltmeter in electric circuit to achieve ohm's law if the electric resistance is spoiled.

.....

.....

.....

.....

.....

.....

B) Complete the following sentences:

1-The current flow through a conductor isproportional to resistance

2-The unit used to measure the current intensity is known as

3- Duringreactions, compound breaks by heat to its simple components.

4- Hormones are directly secreted into the blood stream by.

5- Thyroxin is athat regulates food assimilation in body

.....

.....

.....

C) Compare between the following:

Heating of metal oxide and metal hydroxide.

Heating of metal oxide	metal hydroxide.
2	

Question 4

A) Identify the process of oxidization, reduction, oxidizing factor and reducing factor in each of the following reaction:

[illegible]

B) Choose the correct answer for each of the following statements;

1-The is used to measure the electromotive force of a battery.

a-Voltmeter

b- Ammeter

c- Rheostat

2- When copper hydroxide is heated we obtain:

a- Copper carbonate and water

b- Copper oxide and water

c- Copper and hydrogen

d- Copper oxide and hydrogen

3- The substitution reactions take place when there is:

a- Less active element replaces more active element

b- Less active compound replaces more active compound

c- More active element replaces less active element

d- More active compound replaces less active compound.

C) Give reasons for the following:

1-It is better to use the alternating current rather than the direct current.

2- Voltammeter is connected to both poles of battery in electric circuit.

Question 1

A) Choose the correct answer for each of the following statements;

1-The Sliding Rheostat used to changeand

.....in electric circuit.

a-The current intensity and potential difference

b- the resistance and potential difference

c- current intensity and resistance.

2- Hormone which controls percentage of calcium in the blood is

.....hormone

a- calcitonin

b-thyroxin

c-insulin

d-adrenalin

3- The electric potential difference is measured by.....

a- ammeter

b- ohmmeter

c- voltmeter

d- wattmeter

4-When calcium carbonate is heatedis obtained

a - Calcium bicarbonate, and carbon dioxide

b - Calcium hydroxide and carbon dioxide

c - Calcium oxide and carbon monoxide

d - Calcium oxide and carbon dioxide

B) Give reasons for the following:

1- The stop of the body growth makes the person is dwarf

.....
.....
.....

2- Calcium hydroxide is used in building works

.....
.....
.....
.....

3- Mendel's selecting the pea plant to conduct his experiments.

.....
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.....
.....

Question 2

A) Define each of the following:

1- Ohm's law

.....

.....

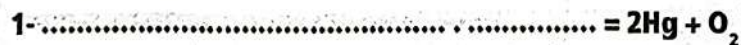
2-The gene it is

.....

.....

B) By

using symbolic formulae complete and balance the following equations



.....

.....

C) calculate quantity of electricity passed in a conductor its resistance 2200 ohm

for two minutes when connected with electric source its electric potential 220 volt

.....

.....

Question 3

A) Mention the difference between each two of the following:

the connection of electric cells in series and in parallel from the point of the value of
produced electromotive force

the connection of electric cells in series	the connection of electric cells in parallel
..... 	

B) What is the scientific idea for each of the following?

1-The dominance of curried hair character on straight hair character

.....

2-The production of big fruits, more delicious and devoid خالية of seeds

.....

C) Explain the following

Occurrence of effervescence on putting aluminum in diluted hydrochloric acid.

.....

Question 4

A) Write the scientific term for each of the following statements:

1-A chemical message that controls and regulates the activities and functions of most of the body organs

(.....)

2- Chemical process where atom gains one or more electron.

(.....)

3- Obstruction of electric current in a conductor.

(.....)

4-A device used to measure intensity of electric current.

(.....)

B) Give reasons for the following:

1- Rheostat is used in some electric circuits.

.....

2- The ability of bending the tongue is a dominant trait in the human being.

.....

3- A red precipitate is formed when magnesium is added to copper sulphate

.....

Question 1

A) Choose the correct answer for each of the following statements;

1- The Ammeter is used to measurein the electric circuit.

a- The potential difference b- the current intensity c- the resistance

2- The substitution reactions take place when there is:

- a- Less active element replaces more active element
b- Less active compound replaces more active compound
c- More active element replaces less active element
d- More active compound replaces less active compound

3- Thehormone releases the needed energy from the food stuffs

a- Growth b- estrogen c- thyroxin

B) draw the graph that show the relation between connection of cells in parallel and the electromotive force

C) Give reasons for the following:

1- The colour of blue copper hydroxide changes by heat into black.

2- Mendel's selecting the pea plant to conduct his experiments.

Question 2

A) Complete the following sentences:

1- Oxidization is a chemical process where atoman electron or more.

2- The.....is used to measure the electromotive force in units



known as

3-anddiscovered the means of how

gene controls appearance trait

4-andhormones are produced from thyroid gland

B) Illustrate by balanced chemical equations the following reaction:

Adding silver nitrate solution to sodium chloride solution.

.....

.....

.....

.....

.....

C) You have four similar cells; the electromotive force of each is 1.5 volt explain by using a diagram how you can connect them to obtain an emf

a-1.5 volts

b- 3 volts

c- 4.5 volts

d-6 Volt

Question 3

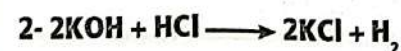
A) Write the kind of each reaction



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.....



B) Compare between the following:

direct current and alternating current from the point of: (Definition of each one - The field of using)

	direct current	alternating current
Definition		
The field of using		

C - Experiment to explain law of independent assortment of hereditary factors.

.....

.....

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.....

Question 4

A) Write the scientific term for each of the following statements:

1- Substance which loses an electron or more during a chemical reaction.

(.....

2- Flowing of electric charges in a conducting element

(.....

3- A science that researches transmission of hereditary traits from one generation to



another by studying similarity and difference between parents and offspring.

(.....)

4- The result when endocrine glands does not work properly.

(.....)

B) Identify the process of oxidization, reduction, oxidizing factor and reducing factor in each of the following reactions:



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.....
.....

C) Mention The model of Watson and Creek of the DNA structure to explain how the genes perform their functions

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نموذج ثالثة اعدادي

4

وزارة التربية والتعليم
مديرية التربية والتعليم بالحافطة

[illegible]

رقم المراقبة

.....:امضاءات المراجعين:

رقم المراقبة

Science : العلم



4

زمن الاجابة : ساعتان

اسم الطالب رابعياً:

المدرسة: الإدارة:

رقم الجلوس المحافظة:

توقيع الملاحظين
بصحة البيانات ومطابقة
عدد اوراق كراسة الاجابة
عند تسلمها من الطالب

Question 1

A) Choose the correct answer for each of the following statements;

1-Thecompound is used in the dry electrode.

a-Sodium chloride

b- ammonium chloride c-

magnesium chloride

2- The mathematical relation of Ohm's law.. ..

a- $R = V/I$

b- $I = RV$

c- $R = V \times I$

3-The hormone responsible for producing secondary sexual male characteristics is the

.....hormone,

a-Progesterone

b- testosterone

c- adrenalin

B) Explain the Occurrence of effervescence with fire on putting sodium in water .

C) The potential difference between the two ends of a conductor is 6 volts and

the electric current intensity passing in the conductor is 0.5 ampere what is the electric current intensity passing in the conductor if it is connected by electric source its electric potential is 12 volts

Question 2

A) Complete the following sentences:

1-agent is the substance which gains one electron or more

2-While connecting charged conductors, the electric current passes from the conductor havepotential to the conductor have

.....potential.

3-andwere able to make a model for the DNA molecule.

4-Types of mutation according to the inheritance toand

.....

B) Illustrate by balanced chemical equations the following reactions:

1- The effect of heat on red mercuric oxide.

.....
.....

2- The reaction of zinc with diluted hydrochloric acid.

.....
.....

C) What happens if we put a piece of potassium in water .

.....
.....

Question 3

A) Choose the correct answer for each of the following statements;

1-When calcium carbonate is heated.....is obtained

a - Calcium bicarbonate and carbon dioxide

b - Calcium hydroxide and carbon dioxide

c - Calcium oxide and carbon monoxide

d - Calcium oxide and carbon dioxide

2-The..... is the measuring unit of the current intensity.

a-Coulomb

b- ampere

c- ohm

3- When copper hydroxide is heated we obtain:

a- Copper carbonate and water

b- Copper oxide and water

c- Copper and hydrogen

d- Copper oxide and hydrogen

B) Find the potential difference between two points if the work done to transfer 50 coulomb is 200 joule .

.....
.....
.....
.....

C) By using symbolic formulae complete and balance the following equations



Question 4

A) By balanced chemical equations, express each of the following reactions

1-The metal replaces Hydrogen of the acid

.....

.....

2-The metal replaces another one-of its salt solutions

.....

.....

3- Double decomposition (replacement)

.....

.....

B) One of your collages asks you for a help in connecting a new radio in its house

if you know that the electric potential at the house is 220 volt and that of the radio is 110 volt.

What is your suggestion to avoid harms during the operation of the radio?

.....

.....

.....

.....

C) by Using symbols to express the results of mating between each of the following.

Two pea plants where one carries white flowers and another carries purple flowers.

.....

.....

.....

37986236801174

Question 1

A) Write the scientific term for each of the following statements:

1- Chemical process causes increasing of oxygen and decreasing of hydrogen

(.....)

2- Obstruction of electric current in a conductor.

(.....)

3- Appearance of a hereditary trait in individuals of first generation after the mating **تزاوج** where one carries a pure hereditary trait that contrasts the trait that the other individual carries

(.....)

B) What is the quantity of electricity passes in a conductor its resistance 1000 Ohm for 30 minute when the potential difference between its ends 220 volts

.....
.....
.....
.....

C) Give reasons for the following:

1-The electromotive force of a battery whose cells are connected in series is greater than that one whose cells are connected in parallel.

.....
.....
.....
.....

2-When a pure yellow pod pea plant is pollinated with a pure green pod pea plant it produces plants that are all with green pods.

.....
.....
.....
.....

Question 2

A) Write the scientific term for each of the following statements:

1- A reaction where an element substitutes another one.

(.....)

2- Resistance of a conductor allows of an electric current of 1 Ampere when the potential difference between its two ends is 1 Volt.

(.....)

3-Trait that appears in all individuals of first generation

(.....)

B) Compare between the Connection in series and in parallel.

	the Connection cells in series	the Connection cells in parallel.
connection		
Emf		
A solved example		

C) Illustrate by balanced chemical equations the following reactions:

1- The effect of heat on sodium nitrates.

.....



2- Chemical reactions in which the compound breaks up into simple elements.

Question 3

A) Write the scientific term for each of the following statements:

1- Chemical reactions in which change between two radicals (ions) of two compounds to form other compounds.

(.....)

2- Intensity of electric current when electric charge of 1 Coulomb passes in conductor in (1) second.

(.....)

3- Mechanism with which hormones work to achieve the homeostasis balance in the human body.

(.....)

B) Illustrate by balanced chemical equations the following reactions:

1- A chemical process in which atom of element acquires one or more electron.

.....
.....
.....

2- The reaction of water with sodium.

.....
.....
.....

3- The decomposition of sodium nitrates by heat.

.....
.....
.....

C) Give reasons for the following:

1- Mendel made self pollination between yellow and green seeds several times .

.....
.....

2- Some cells are connected in the electric circuit in series.

3- Voltammeter is connected to both poles of battery in electric circuit.

Question 4

A) Write the scientific term for each of the following statements:

1- Substance removes oxygen or gives hydrogen during chemical reaction

(.....

2- The measurement unit of the electromotive force of the electric cell.

(.....

3- Organs secreting hormones in human body.

(.....

4- Substance which loses an electron or more during a chemical reaction.

(.....

5- Chemical process causes increasing of oxygen and decreasing of hydrogen .

(.....

B) You have four similar cells; the electromotive force of each is 1.5 volt

explain by using a diagram how you can connect them to obtain an emf

a- 1.5 volts

b- 3 volts

c- 4.5 volts

C) Identify the process of oxidization, reduction, oxidizing factor and reducing factor in each of the following reactions:



نموذج ثالثة اعدادي

6

وزارة التربية والتعليم
مديرية التربية والتعليم بالحفاضة

[illegible]

عدد أوراق الامتحان
(١٤) بخلاف الغلاف
وعلي الطلاب مسؤولية
المراجعة والتأكد من
ذلك قبل تسليم
الكراسة

رقم المراقبة

مجموع الدرجات

.....: **مجموع الدرجات بالحروف:**

.....:امضاءات المراجعين:

عدد أوراق الامتحان (١٤) بخلاف
الغلاف وعلي الطلاب مسؤولية
المراجعة والتأكد من ذلك قبل
تسليم الكراسة

وزارة التربية والتعليم

امتحان تجريبي شهادة اتمام الشهادة الإعدادية

Science : المادة :

رقم المراقبة

التاريخ: ٢٠٢٥ / ١ / ١

زمن الاجابة : ساعتان

6

نموذج ثالثة اعدادى

اسم الطالب رابعياً:

.....: الإدارة:.....: المدرسة:

رقم الجلوس المحافظة :

توقيع الملاحظين

بصحة البيانات ومطابقة

عدد اوراق كراسة الاجابة

عند تسلمها من الطالب

Question 1

A) Complete the following sentences:

- 1-is the reaction between acid and alkali to form salt and water.
- 2- Electric current generated from a dynamo due to changing energy to
- 3-and.....hormones are produced from Pancreas gland
- 4 - When hydrogen gas passed over hot copper oxide, it converts to a

B) Illustrate by balanced chemical equations the following reactions:

- 1- Insertion of a magnesium ribbon in a solution of copper sulphate.

.....

.....

- 2- The reaction of hydrochloric acid with sodium hydroxide.

.....

.....

C) Correct the following sentences

- 1-The direct current can be transferred to a long distances.

.....

.....

- 2-The battery produces alternating electric current.

.....

.....

Question 2

A) Write the scientific term for each of the following statements:

- 1- The electric current of fixed intensity and direction. (.....)
- 2- A reaction where an element substitutes another one. (.....)
- 3- Are parts of DNA on the chromosomes and control the hereditary traits of the individual. (.....)
- 4-Mechanism in which hormone works in human body. (.....)



B) Compare between the following:

1- Oxidation and reduction.

Oxidation	Reduction

2- Oxidation and oxidizing agent from the point of meaning of each one.

Oxidation	oxidizing agent



Question 3

A) Complete the following sentences:

1-agent is the substance which gives oxygen and takes hydrogen.

2- Breakup of bonds in reactants and forming of new bonds is called.

3- Oxidation and reduction are twoprocesses.

4- Cell produces.....current while the dynamo produces

.....current.

B) Give reasons for the following:

1- Rheostat is used in some electric circuits.

2- Mendel covers stamens of pea flowers during study character of seeds colour.

C) Illustration by drawing

Two pea plants where one carries a trait (long stem) and the other carries a trait (short stem)

Question 4

A) Write the scientific term for each of the following statements:

1- Flowing of electric charges in a conducting element (.....)

2-Traits that aren't transmitted from generation to another.(.....)

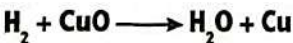
3- Substance removes oxygen or gives hydrogen during chemical reaction.

(.....)

4- Affected by hormones and located faraway from glands. (.....)

B) Identify the process of oxidization, reduction, oxidizing factor and reducing

factor in each of the following reactions:



C) Draw a diagram represents each of the following:

Electric circuit used to verify Ohm's law

توقيع الملاحظين
بصحة البيانات ومطابقة
عدد اورلق كراسة الاجابة
عند تسلمها من الطالب

Question 1

A) Write the scientific term for each of the following statements:

- 1- Electric state of a conductor that shows transferring of electricity.(.....)
- 2-Traits that aren't transmitted from generation to another. (...)
- 3- Amount of electric charges that flow in a conductor in a certain time.
(.....)
- 4- The electric current of fixed intensity and direction.
(.....)
- 5- Intensity of electric current when electric charge of 1 Coulomb passes in conductor in 1 second. (.....)

B) Give reasons for the following:

- 1-Some cells are connected in the electric circuit in parallel.

- 2- Magnesium can replace copper in solutions while opposite cannot happen

C) By balanced chemical equations, express each of the following
reaction Neutralization

Question 2

A) Compare between the following:

The dominant trait and the recessive one with giving examples.

The dominant trait	the recessive trait

B) Complete the following sentences:

- 1- There are two types of electric current and
- 2- Electric intensity is measured by..... and its measuring unit is.
.....
- 3- Oxidization is a chemical process where atoman electron or more.
- 4- agent is the substance which gains one electron or more
- 5- hormone secreted if the rate of glucose sugar increases in blood

C) By balanced chemical equations, express each of the following reaction

Adding magnesium to copper sulphate solution

.....
.....
.....

Question 3

A) Write the scientific term for each of the following statements:

- 1- The measurement unit of the electromotive force of the electric cell.
(.....)
- 2- It is chemically consisted of a nucleic acid (DNA) with protein.
(.....)
- 3- Chemical reactions in which change between two radicals (ions) of two compounds to form other compounds (.....)
- 4- A science that researches transmission of hereditary traits from one generation to another by studying similarity and difference between parents and offspring.
(.....)

B) Correct the following sentence

e.m.f. for several cells in series = e.m.f for one cell.

.....
.....
.....

C) Draw a diagram represents the following:

Alternating current cycles (the graph between intensity and time)

.....
.....

Question 4

A) Choose the correct answer for each of the following statements;

1-The unit of measuring the electric resistance is.....

- a-Ampere b-Volt c- Ohm

2- Electric resistance value of a conductor changes when the value of changes

- a- The conductor dimension b- The passing electric current intensity
c- The potential difference between its ends d- The other components in the electric circuit

3- To measure electric current intensity passing in electric circuit used

- a- Pyrometer b - barometer c -voltmeter d -ammeter

4-To measure potential difference between the two ends of a conductor in electric circuit.....is used.

- a- Pyrometer b - barometer c -voltmeter d -ammeter

B) By balanced chemical equations, express each of the following reactions

1- Adding aluminum turnings to dilute hydrochloric acid

.....
.....

2-The reaction of hydrochloric acid with sodium hydroxide and what is the name of this reaction.

.....
.....

C) What happens if a hydrogen gas passes over copper oxide with heating

.....
.....

Question 1

A) Write the scientific term for each of the following statements:

1-A device used to measure intensity of electric current.

(.....)

2- Electric state of a conductor that shows transferring of electricity

(.....)

3- Appearance of a hereditary trait in individuals of first generation after the mating **تزاوج** where one carries a pure hereditary trait that contrasts the trait that the other individual carries. (.....)

B) correct the underlined words

1 – The increase in the concentration of the reactants decreases speed

.....

.....

2 – The reactions of ionic compounds are slower than of covalent compound

.....

.....

C) Give reasons for the following:

1- Some cells are connected in the electric circuit in series.

.....

.....

2- Growth takes place in bones of limbs which make people giants

.....

.....

Question 1

A) Define each of the following:

1- Electric current intensity.

.....

.....

2- Ohm's law

.....

.....

B) What is the scientific idea for each of the following?

The dominance of curried hair character on straight hair character

.....

.....

.....

.....

C) Illustrate by balanced chemical equations the following reactions:

1- The reaction between hydrochloric acid and sodium hydroxide.

.....

.....

2- Adding silver nitrate solution to sodium chloride solution.

.....

.....

Question 3

A) Give reasons for the following:

1-Some cells are connected in the electric circuit in parallel.

.....

.....

2-The electromotive force of a battery whose cells are connected in series is greater than that one whose cells are connected in parallel.

.....

.....

.....

B) Draw a diagram represents each of the following:

Graphic representation of the direct current

.....

.....

.....

.....

.....

.....

C) calculate quantity of electricity passed in a conductor its resistance 2200 ohm for two minutes when connected with electric source its electric potential 220 volt

.....

.....

.....

.....

Question 4

A) What is the scientific idea on which:

The dominance of the presence of facial dimples character of the absence of facial dimples character.

.....

.....

.....

.....

B) By balanced chemical equations, express each of the following reaction

The reaction of water with sodium.

.....

.....

C) an electric resistance (6) ohm in electric circuit is connected with electric source its potential difference 3volts

Calculate the electric current intensity in each resistance

.....

.....

.....

بصحة البيانات ومطابقة
عدد اوراق كراسة الاجابة
عند تسلمها من الطالب

Question 1

A) By balanced chemical equations, express each of the following reactions

1-reduction of hot copper oxide by passing hydrogen gas

.....
.....

2- Adding calcium hydroxide solution to hydrochloric acid

.....
.....

B) A conductor of electric resistance 22 ohm and the quantity of electricity passed

through it in one second equals 10 coulombs

Calculate the potential difference between the its two ends

.....
.....
.....

C) Define each of the following:

1 - Ammeter

.....
.....

2-Electric potential

.....
.....

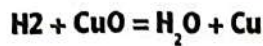
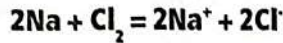
Question 2

A) Compare between the following:

The inherited traits and the acquired traits

The inherited traits	The acquired traits

C) Identify the process of oxidization, reduction, oxidizing factor and reducing factor in each of the following reactions:



.....

.....

.....

.....

Question 4

A) Define each of the following:

1-Volt

.....

.....

2- Electric resistance

.....

.....

3- Ohm

.....

.....

B) What is the quantity of electricity passes in a conductor its resistance 1000 Ohm for 30 minute when the potential difference between its ends 220 volts

.....

.....

C) Mendel supposes a group of hypotheses to explain the presence of recessive character in the first generation in the studied experiments on pea plant. Explain these hypotheses?

.....

.....

.....

.....

Question 1

A) Define each of the following:

Second Mendel law:

If two individuals are different in more contrasting traits copulate, the trait of each pair is inherited independently and appears in the second generation at a ratio of 3 : 1

.....

.....

.....

.....

.....

B) Calculate the potential difference of the two ends of a vacuum cleaner whose resistance is 22 Ohm and the current intensity passing through it is 10 Ampere

.....

.....

.....

Question 2

A) Write the scientific term for each of the following statements:

1- Change in nature of hereditary factors that control the traits of living organism, which results in a change in the traits of living organism

(.....)

2- The characters ready to be transmitted from one generation to another.

(.....)

3-Trait that appears in all individuals of first generation

(.....)

B) Correct the following sentences

1-The direct current can be transferred to a long distances.

.....

.....

2-The battery produces alternating electric current.

.....

.....

C) Experiment to explain law of independent assortment of hereditary factors.

D) Mention the model of Watson and Creek of the DNA structure to explain how the genes perform their functions

Question 3

A) state the law of segregation of factors .

B) What would happen?

1-The reading of both ammeter and voltmeter in electric circuit to achieve ohm's law if the electric resistance is spoiled.



2- To the percentage of blood sugar if the pancreas stops secreting glucagon hormone

.....

.....

3- to the electric current intensity if the length of the rheostat wire increases

.....

.....

Question 4

A) Complete the following sentences:

- 1- During reactions, compound breaks by heat to its simple components.
- 2- is the reaction between acid and alkali to form salt and water.
- 3- agent is the substance which gives oxygen and takes hydrogen.
- 4- The current flow through a conductor is proportional to resistance.

B) calculate the quantity of electric current if the current intensity is 3 ampere pass in 13 second

.....

.....

.....

.....

C) Correct the under lined word :

1 - Ampere is used to measure the electro motive force

.....

.....

2 - Ammeter is the device that measures the potential difference

.....

.....

3 - Volt is the unit fer measuring electric current resistance

.....

.....



Model 1

Question 1

(A)

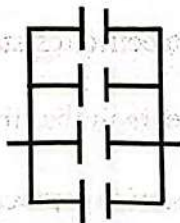
- 1- chemical reaction.
- 2- reduction process.
- 3- electricity
- 4- electric current
- 5 - pititary gland
- 6- Ohm.

(B)

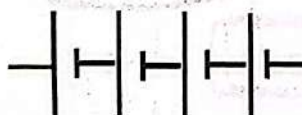
- 1- $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
- 2- $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{AgCl} + \text{NaNO}_3$

(C)

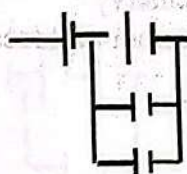
a -1.2 volt



b- 4.8 volt



c- 2.4 volt



Question 2

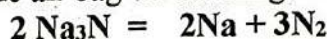
(A)

- 1- Electric current intensity is the quantity of electricity that pass in a wire in one second.
- 2- Diabetes is disease caused by decreasing in insulin

(B)

- 1- 2HgO
- 2- 2NaNO_2
- 3- HCl

(C) the air bag in cars is dew signed on the occurrence of the car crash they get vacuumed and sodium nitride decomposes forming nitrogen that fills the air bag on crashing.



Question 3

(A)

- 1- liberation of energy increases
- 2- The current intensity and potential difference can't be controlled.

(B)

- 1- inversely
- 2- ampere
- 3- thermal decomposition
- 4- endocrine glands
- 5- hormones - cells

(C) metal oxide gives oxygen but metal hydroxide gives water vapour

Question 4

(A)

- $\text{Zn} \rightarrow \text{Zn}^{+2}$ oxidation process
 $\text{Cr}^{+3} \rightarrow \text{Cr}$ reduction process
 Cr^{+3} oxidizing factor
 Zn reducing factor

(B)

- 1- a-Voltmeter
- 2- b- Copper oxide and water
- 3- c- More active element replaces less active element

(C)

- 1- because it can change into direct.
- 2- to measure the electromotive force.

Model 2

Question 1

(A)

- 1- c- current intensity and resistance.
- 2- a- calcitonin
- 3- c-voltmeter
- 4 - d - Calcium oxide and carbon dioxide

(B)

- 1- due to decreasing in growth hormone
- 2- because it is used in making building materials
- 3- because its life cycle is short and gives large number of plants in one generation.

Question 2

(A)

- 1- electric current intensity is direct proportional to the electric potential difference at constant temperature.
- 2-The gene it is a part of DNA that presents on the chromosomes

(B) 1- 2HgO 2- 2NaNO_2

(C)

$$I = V / R = 220 / 2200 = 0.1 \text{ ampere}$$

$$q = I \times t = 0.1 \times (2 \times 60) = 12 \text{ coulomb}$$

Question 3

(A) in case of the connection of electric cells in series the electromotive increases and in case of parallel the value of produced electromotive force still as it is

(B)

- 1- The individuals who receive one dominant gene from either parent will have the dominant trait,
- 2- Resulting from the occurrence of the induced mutations.

(C) Due to evolving of hydrogen gas

Question 4

(A)

- 1- Hormones
- 2- reduction
- 3- Electric resistance
- 4- Ammeter

(B)

- 1- to change the electric resistance and intensity
- 2- because it appears in the first generation
- 3- because magnesium replaces copper

Model 3

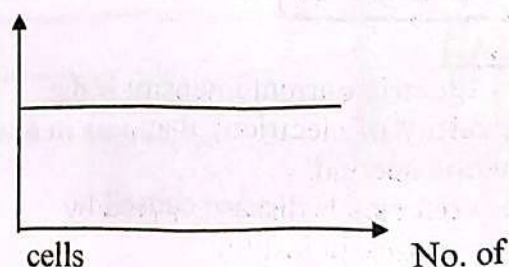
Question 1

(A)

- 1- b- the current intensity
- 2- c- More active element replaces less active element
- 3- c- thyroxin

(B)

Connection in parallel



Question 3

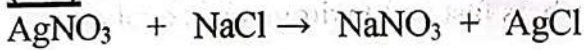
- 1- because copper hydroxide decomposes to copper oxide that has a black color and carbon dioxide
- 2- because it can grow fast and its life cycle is short.

Question 2

(A)

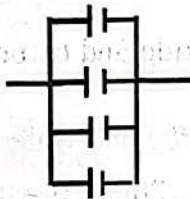
- 1- lose.
- 2- voltmeter - volts
- 3- Beadle and Tatum
- 4- thyroxin and calcitonin

(B)

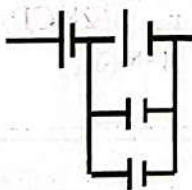


(C)

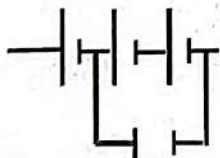
a-



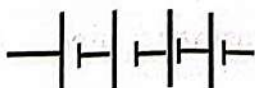
b-



c-



c-



(A)

- 1- simple substitution reaction
- 2- double substitution reaction
- 3- simple substitution reaction

(B)

Points of comparison	Direct current DC	Alternating current AC
Definition	It has constant intensity	It has variable intensities
Uses	Operating some electric machines such as torches & electroplating.	Lighting houses & streets & operating electric appliances at houses.

(C)

Steps:

- 1-Mendel planted a pea plant that produces yellow seeds and a pea plant that produces green seeds for several generations.
- 2- Mendel makes self pollination for plants.
- 3- Mendel removed the stamens

Obs.

- 1- Yellow seeds produced yellow seeds
- 2- Green seeds produced green seeds plants.

Question 4

(A)

- 1- Reducing agent
- 2- electricity
- 3- genetics
- 4- hormone disorder

(B)

- oxidization $2\text{Li} \rightarrow 2\text{Li}^{+1}$
 reduction $\text{Pb}^{+2} \rightarrow \text{Pb}$
 oxidizing factor Pb^{+2}
 reducing factor 2Li

(C)

- 1-The model is composed of two strands coiled make double helix
- 2- Strands consisted of sugar and phosphate groups
- 3- Strands join with groups of four types of nitrogenous bases.
(Adenine with thymine and guanine with cytosine)
- 4-The nitrogenous bases are organized of threes
- 5-Every three represent a specific code responsible for a distinct trait.

Model 4

Question 1

(A)

- 1- b- ammonium chloride
- 2- a- $R = V/I$
- 3- b- testosterone

(B) due to hydrogen gas that evolved with heat .

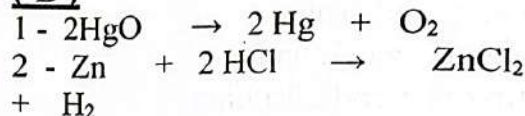
(C) $I = 12 \times 0.5 / 6 = 1$ ampere

Question 2

(A)

- 1- oxidizing
- 2- higher - lower.
- 3- Watson and crick.
- 4-somatic mutation and gamete mutation

(B)



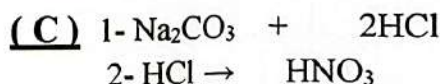
(C)

reacts fast and hydrogen gas evolved

Question 3

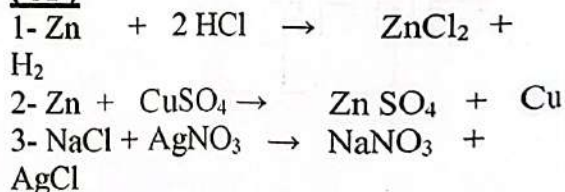
(A)

- 1- d - Calcium oxide and carbon dioxide
- 2- b- ampere
- 3- b- Copper oxide and water

(B) $v = w / q = 200 / 50 = 4$ volt

Question 4

(A)



(B) step down transformer used .

(C)

WW x PP
 W W x P P
 WP WP WP WP
 All flowers have hybrid white

Model 5

Question 1

(A)

- 1- oxidation
- 2- Resistance
- 3- the principle of complete dominance

(B)

$I = V / R = 220 / 1000 = 0.22$ ampere
 $q = I \times t = 0.22 \times (30 \times 60) = 396$
 coulomb

(C)

- 1- because the relation between the electromotive force and number of cells connected in series is directly
- 2- Because a green colour is dominant

Question 2

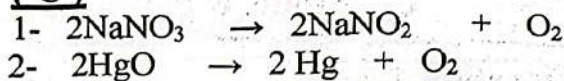
(A)

- 1- Simple substitution reaction
- 2- One ohm
- 3- dominant traits

(B)

Points of comparison	Connecting cells in series	Connecting cells in parallel
Connection	The negative pole is connected to the positive pole of the 2 nd cell & so on.	The positive poles are connected together, while the negative poles are connected together.
Emf	= the sum of emf of all the cells. $E = E_1 + E_2 + E_3 + E_4$	If the cells have the same emf = emf of one cell. $E = E_1$ or E_2 or E_3 since $E_1 = E_2 = E_3$.
A solved example	A circuit contains 4 cells connected in series. The emf of the battery = $4 \times 1.5 = 6$ volt.	A circuit contains 3 cells connected in parallel. emf = 2 volt

(C)

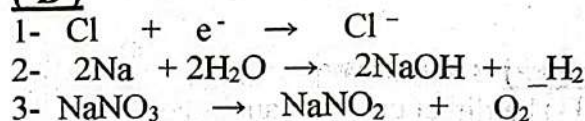


Question 3

(A)

- 1- Double substitution reaction
- 2- One ampere
- 3- Feedback mechanism

(B)



(C)

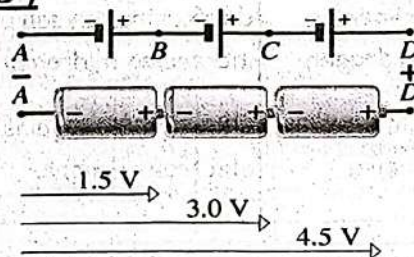
- 1- To be sure of purity .
- 2- to increase the electromotive force.
- 3- to measure the electromotive force of battery.

Question 4

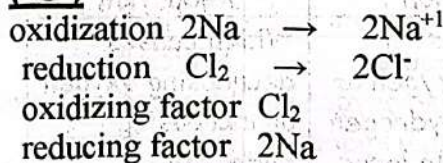
(A)

- 1- reducing agent
- 2- volt
- 3- Endocrine glands
- 4- reducing agent
- 5- oxidation process

(B)



(C)



Model 6

Question 1

(A)

- 1- neutralization.
- 2- kinetic energy to electric energy
- 3- Insulin and Glucagon hormones
- 4 - water vapour

(B)

- 1- $Mg + CuSO_4 \rightarrow MgSO_4 + Cu$
- 2- $HCl + NaOH \rightarrow NaCl + H_2O$

(C)

- 1-The direct current cannot be transferred to a long distance.
- 2-The battery produces direct electric current.

Question 2

(A)

- 1- Direct current
- 2- Simple substitution reaction
- 3- gene
- 4- Feedback mechanism

(B)

1-

Oxidation	Reduction
Which causes increasing oxygen or decreasing hydrogen	Which causes decreasing oxygen or increasing hydrogen
OR when atom loses electron or more.	OR when atom gains electron or more.

2-

Oxidation	Reduction
Which causes increasing oxygen or decreasing hydrogen OR when atom loses electron or more.	Which causes decreasing oxygen or increasing hydrogen OR when atom gains electron or more.

(C)

- A is NaCl
B is $NaNO_3$
D is O_2

Question 3

(A)

- 1- oxidizing agent
- 2- chemical reaction
- 3- concurrent.
- 4- direct current – alternating current.

(B)

- 1- to change the electric current intensity.
- 2- To be insure it does not self-pollinate

(c)

Long short
T T × t t
T T × t t
 T t

Hybrid tall will produced

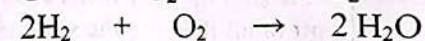
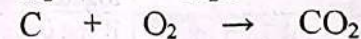
Question 4

(A)

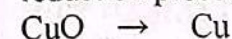
- 1- electricity
- 2- acquired trait
- 3- Reducing agent
- 4- Target cells

(B)

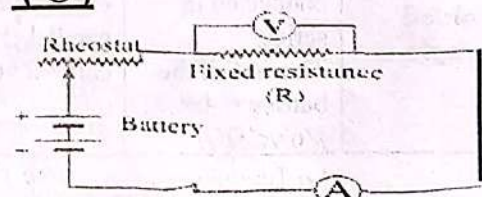
oxidation process



reduction process

 O_2 and CuO are oxidizing factors H_2 and CH_4 reducing factor

(C)



Model 7

Question 1

(A) Write the scientific term for each of the following statements:

- 1- Electric potential
- 2- acquired trait
- 3- electric current
- 4- direct current
- 5- 1 ampere

(B)

- 1- fix the electric current intensity.
- 2- because Magnesium more active than copper.

(C) $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$

Question 2

(A)

- 1-direct current and alternating current
- 2- ammeter - ampere
- 3- lose
- 4- oxidizing
- 5- insulin

(B)

Dominant trait:

It is the trait which appears either exists with another dominant or recessive trait.

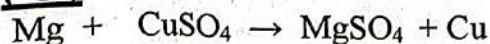
Recessive trait

It is the trait which appears only with another similar recessive trait.

Ex.

Dominant trait	Recessive trait
1- The ability to roll the tongue	Can't roll tongue

(C)



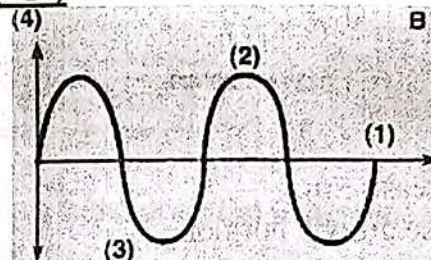
Question 3

- (A)
- 1- volt
 - 2- chromosome
 - 3- substitution reaction
 - 4- genetics

(B)

e.m.f. for several cells in series more than e.m.f for one cell.

(C)



Question 4

- (A)
- 1- c - Ohm
 - 2- a- The conductor dimension
 - 3- d-ammeter
 - 4- c- voltmeter

(B)



2- $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$ this reaction is called neutralization

(C) Converts to copper

Model 8

Question 1

(A)

- 1- ammeter
- 2- Electric potential
- 3- The principle of complete dominance

(B)

- 1 - increase
- 2 - higher

(C)

- 1- To increase e.m.f.
- 2- increase growth hormone

Question 2

(A)

- 1- it is the amount of electric charges that pass in a conductor in one second
- 2- the electric current intensity is directly proportional to the electromotive force at constant temperature

(B)

The individuals who receive one dominant gene from either parent will have the dominant trait,

(C)

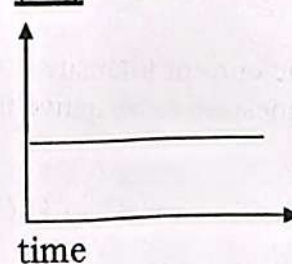
- 1- $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$
- 2- $\text{NaCl} + \text{AgNO}_3 \rightarrow \text{NaNO}_3 + \text{AgCl}$

Question 3

(A)

- 1- to fix electromotive force
- 2- The electromotive force of a battery whose cells are connected in series is greater than that one whose cells are connected in parallel.

(B)



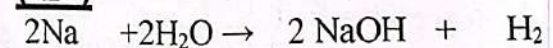
(C) 12 volt

Question 4

(A)

The individuals who receive one dominant gene from either parent will have the dominant trait.

(B)



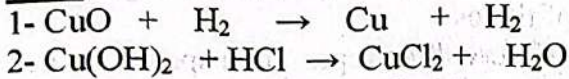
(C)

$$I = V / R = 3 / 6 = 0.5 \text{ Ampere}$$

Model 9

Question 1

(A)



(B)

$$V = R \times I = 22 \times (10 / 1) = 220 \text{ volt}$$

(C)

- 1- it is a device used to measure the electric current intensity
- 2- it is the state of a conductor that shows the direction of electric current

Question 2

(A)

The inherited traits : They can transfer from generation to another
the acquired traits : They can't transfer from generation to another

(B)

- 1- Because it appears in first generation
- 2- to prevent self pollination.

(C)

$$I = q / t = 900 / 90 = 10 \text{ ampere}$$

Question 3

(A)

- 1- Characters can not transfer from parents to offspring
- 2- it is that appears in first generation alone.

(B)

- 1- In dominant gene appears in first generation
- 2- In recessive character genes appear in second generation

(C)

oxidization $2\text{Na} \rightarrow 2\text{Na}^{+1}$
reduction $\text{Cl}_2 \rightarrow 2\text{Cl}^{-}$
oxidizing factor Cl_2
reducing factor 2Na

Question 4

(A)

- 1- It is the potential difference when the electric current intensity equals to one ampere and resistance one ohm
- 2- it is the opposition in the electric wire
- 3- it is the resistance when the intensity equals to one ampere and potential difference is one volt

(B) $q = I \times t = (V / R) \times t =$
 $(220 / 1000) \times 30 \times 60 = 396$
 coulomb

(C)

- 1- The hereditary traits transmitted by genes.
- 2- Each trait controlled by two factors from father and mother
- 3- Factors are similar if trait is pure and different if the trait is impure
- 4- The two factors separate when gametes are formed

Model 10

Question 1

(A)

If two individuals are different in more contrasting traits copulate, the trait of each pair is inherited independently and appears in the second generation at a ratio of 3 : 1

(B) $v = R \times I = 22 \times 10 = 220$ volt

Question 2

(A) 1- mutation
2- dominant traits
3- dominant genes

(B)
1-The direct current can't be transferred to a long distance.
2-The battery produces direct electric current.

(C)

Steps:

- 1-Mendel planted a pea plant that produces yellow seeds and a pea plant that produces green seeds for several generations.
- 2- Mendel makes self pollination for plants.
- 3- Mendel removed the stamens

Obs.

- 1- Yellow seeds produced yellow seeds
- 2- Green seeds produced green seeds plants.

(D) The model of Watson and Creek of the DNA structure to explain how the genes perform their functions

- 1-The model is composed of two strands coiled make double helix
- 2- Strands consisted of sugar and phosphate groups

3- Strands join with groups of four types of nitrogenous bases.

(Adenine with thymine and guanine with cytosine)

4-The nitrogenous bases are organized of threes

5-Every three represent a specific code responsible for a distinct trait.

Question 3

(A)

When two individuals of any pure pair of allomorphic character differ from one another crossed, only one character appears in F₁, and then the two characters appear together in F₂ by the ratio 3-1

(B)

- 1- resistance will be constant
- 2- insulin produce
- 3- the electric current intensity decreases

Question 4

(A) Complete the following sentences:

- 1- thermal decomposition reactions
- 2- neutralization
- 3- oxidizing
- 4- inversely

(B)

$$q = I \times t = 3 \times 13 = 39 \text{ coulomb}$$

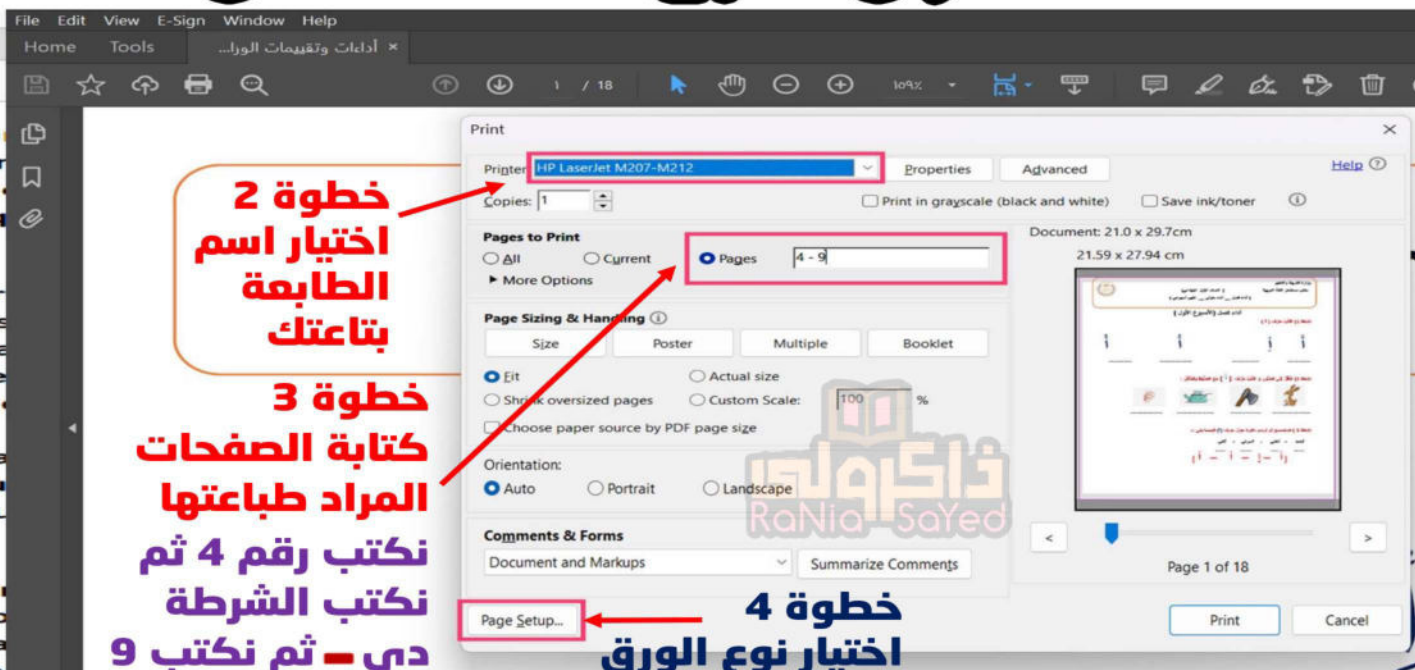
(C) Correct the under line

- 1- volt
- 2- voltmeter
- 3- Ohm

كيفية طباعة صفحات معينة من ملف معين مثلا ازاي نطبع الصفحات من صفحة 4 الى صفحة 9



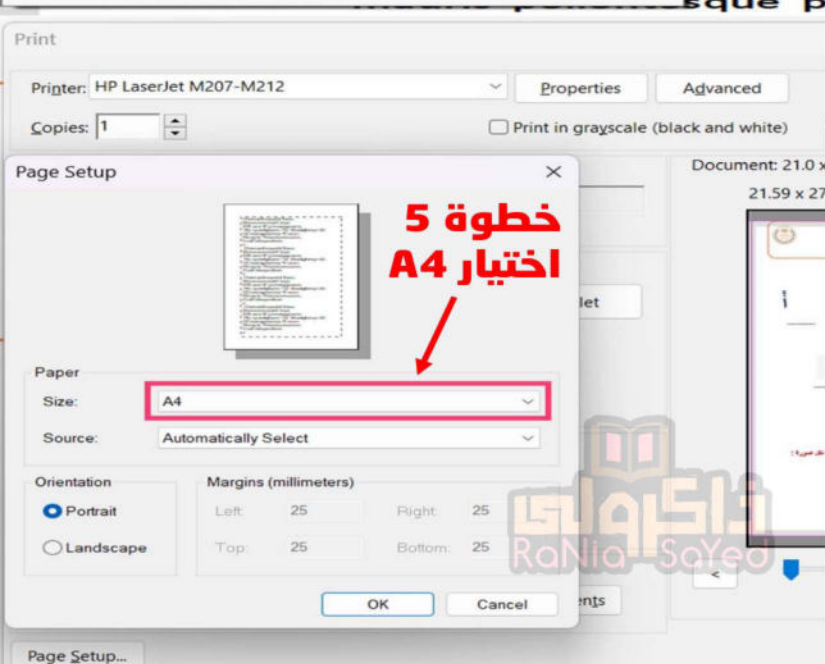
خطوة 1



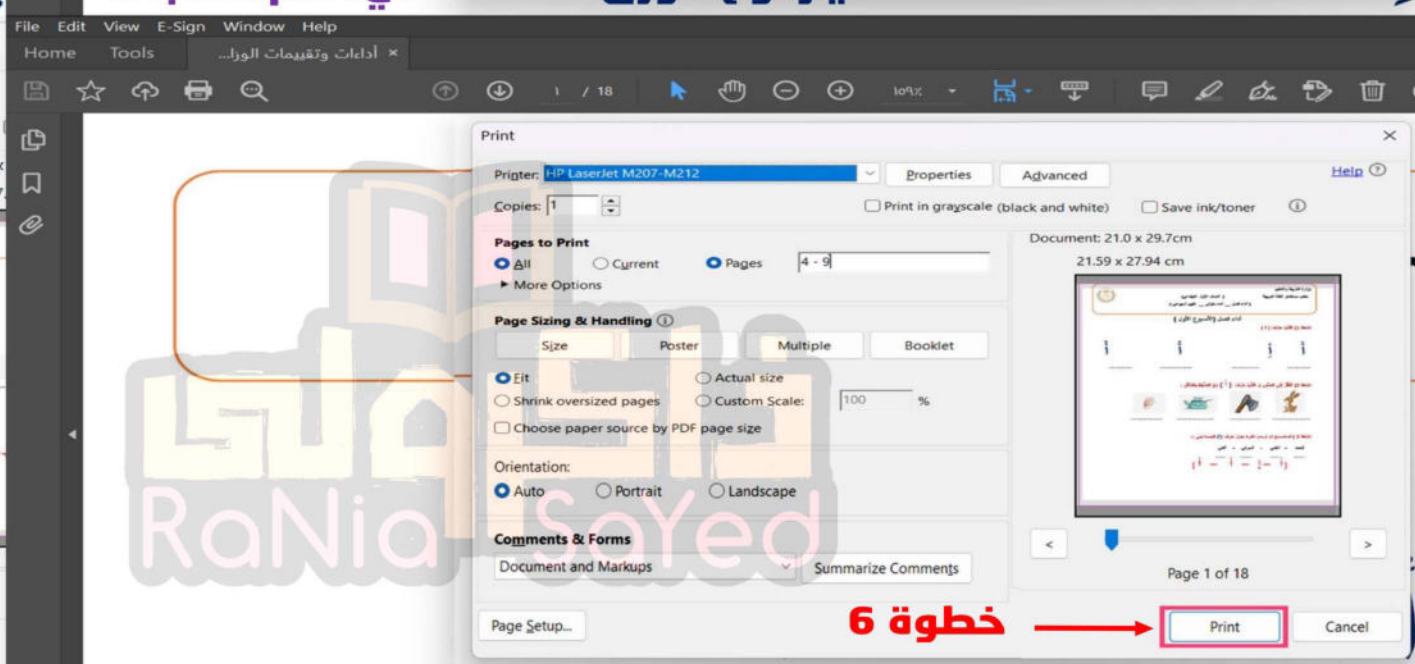
خطوة 2
اختيار اسم
الطابعة
بتاعتك

خطوة 3
كتابة الصفحات
المراد طباعتها
نكتب رقم 4 ثم
نكتب الشرطة
دي - ثم نكتب 9

خطوة 4
اختيار نوع الورق



خطوة 5
اختيار A4



خطوة 6